

Buyer be smart: How to shop for IT products with your users Leadership Series follows page 32

Who's liable for year 2000 work? Experts say read the fine print in service contracts. Corporate Strategies, page 37

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Spam attacks send angry firms to court

Ry Struggt Deck and Matt Hambler

INTERNET SPAM IS NO longer a joke to angry businesses. They increasingly are fighting back with cryl and criminal lawsuits and offering rewards for information leading to arrests. In some cases, users are even trying chargeback tactics.

Driving the get-tough attitude is mounting frustration over crappled and lost business because of overloaded electronicmail servers, trademark infringement and the nefarious combination of return address impersonation - known as specing - and blasts of spammine E-mail advertisements Faced in some instances with death threats, exasperated and angry World Wide Web site administrators are trying anything and everything - including of fering bounties for the names of spammers - and risking online vendettas in the process

IMAGE AT STAKE Particularly vulnerable to spartming - which some observers

call "Internet terrorism" - is a company's image, which businesses spend untold dollars building, maintaining and pro-

One high-profile example is Samsung America, Inc.'s nightmare, which began July 19 when a fake advertisement blasted across the Interpet to millions of electronic mailboxes. The anery replies caught Samsung by surprise - it hadn't sent out the advertisement

Other messages bearing Samsung's return address have swamped unsuspecting mailboxes since then, including a Spam, page 16

By Thomas Hotiman Before college graduate Stephanie Devaney.

21, entered the information technology workforce two months ago, she narrowed her

target list to IT vendors and consulting firms. There were no banks, retailers or other user com-

panies in her sights. Her decision in June to sign on with Big Six consulting firm Ernst & Young LLP in Atlanta is a symptom of a growing problem for corporate IT shops:

Mega-warehouse drives targeted marketing

By Jaikumar Vissyan IF YOU THINE building a data wasehouse for one company is hard, try building an integrated version for more than 10. That's what HFS, Inc. in Par sipanny, N.J., is trying to do. The \$10 billion holding com

pany of national chains said it is tional Hotels & Resorts, Century nearing completion on a \$5.5 milion interrated warehouse that contains data on more than so million customers arross all of HFS's brands worldwide. Those companies include Avis, Inc., Howard Johnson International, Inc., Ramada Interna-

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21 Real Estate Corp., Coldwell Banker Corp. and Resort Condo-Mega-warehouse, page 115





SKILLS SHORTAGE STRIKES AGAIN

Crash!

RICH TENNANT

Integration inflation

▶ Users balk at soaring programmer salaries

By Jaikumar Vijayan

NO MORE blank checks. That's the message fed-up week are sending to systems in. tegrators as the skills shortage, combined with rising salaries, has blown the lids off outsourc-

ing budgets everywhere. When Trigon Blue Cross/Blue Shield outsourced its war aooo conversion work to Cap Gemins America last year, it made sure

to build in one condition to the fixed-price contract that the inpurer wouldn't end up bearing the brunt of inflating programmer salaries That simple clause could help the company save as much as

5% to 10% in additional labor costs by the end of the multimillion-dollar project. Such savvy negotiations will come increasingly important for companies in the coming

During the past year alone, salaries for programmers and jumped by more than 17%, and the number of unfilled computing positions stood at 190,000, according to Information Technology Association of America. an industry trade group in Arlington, Va.

Our position going in was to incent our vendor to hire the most reasonably priced people they could get for the project," said Dan Clark, director of application services at Trigon in Rich-

"We did not want them to think they had a blank check to go out and hire people at whatever rate the market will bear." Clark said

There is cause for such concern Systems integrators today are paying significantly more than that they had originally budget ed to attract, hire and retain too talent. Especially in hot new areas such as SAP or Baan implementations, for example, inregrators are sometimes paying up to so% more than budgeted to find or replace talent, analysts said. And year 2000 conversion jobs have further increased the skills demand.

Typically, information sys-tems staffing firms and integration companies have been able to here the best talent in a skillsstarved market by paying well above what compositions can afford to pay. For instance, many IS staffing firms pay workers as much as a 30% premium above what they could earn as an IS employee (CW, May 19). Those costs are passed on to the cus-

if. "It is not like you are going to be able to stop a multimilliondollar project halfway because you are faced with a resources

As a result, users may be better off trying to manage costs by enforcing commitments from their vendors relating to quality of the deliverables and the time

Parker Hannifin's David Krauthamer works tegrators to fix the salaries paid to program

"The salaries we have to pay frame in which work gets done. said Howard Lackow, an analyst at Technology and Business Infor our programmers have been increasing at nearly double the rate compared to even two years tegrators in Woodcliff Lake, N.J. ago," said Paul Gosgrave, chair-Parker Hannifin regularly man and CEO of Claremont farms out application develop Technology Group, an integra-tor in Portland, Ore. "But so far, ent projects to integrators and For low-end projects, the firm

used to budget \$2 to \$2.50 for labor costs for every \$2 it spent on application software. Today, the cost for labor is closer to \$4 for every \$r spent on the software — and the cost is climbing sharply, Krauthamer said.

To control costs, his compa recently started working with its integrators to not only recruit ogrammers, but also to fix ir salaries. ()

we have had little push back from our customers when we

today's market where demand far outstrips supply. "Frankly. this is becoming a seller's mar "After all, what are you going er. MIS manager at Parker Han



IT'S REALLY QUITE AN ENTERTAINING PIECE OF SOFTWARE, THERE'S ROLLER CONSTER ACTION. SUSPENSE AND DRAMA, WHERE SKILL AND STRITEGY RE MITCHED AGAINST NINNING AND LOSING. AND I THOUGHT MANAGING OUR BUDGET WOULD BE DULL"

ness it on to them.

ket," Cosgrave said.

to do?" asked David Kraut

That's because custs

looking to outsource may have

little choice given the realities of



Browser bug opens firewall

By Stewart Deck and Sharon Gaudin

A SECURITY FLAW that has popped up in the three leading browsers enables Java applets to open certain types of network connections to any host on the

When the loophole occurs, browners from Sun Microsystems, Inc., Microsoft Corp. and Communications Corp. don't implement the Java security specification properly That allows an applet to send the visitor to another server and from there, to load image or class files onto the visitor's hard

"Bugs like this make me ner vice president of the Internet 6 nance group at Neural Applica tions Corn. in San Francisco Say we build a really cool app let and send it out. All tho people can come back at me and get into my servers. That's ma-

for scary, man "It's definitely a worry." Conpolly said. "It makes you stop and think what people can get into. It hasn't been a problem for us yet, though."

The problem occurs with the way Java Development Kits (IDK) are implemented in the ers, said Ben Mesander, a consultant at Creative Concepti Corp. in Boulder, Colo., who dis-

covered the prof Mesander said although Microsoft, Netscape and Sun haven't publicly showed much concern, he is "uncomfortable with anything that can get a co-vert channel through a forwall." He said security architects from the vendors have quietly contacted him. Mesander found that image files and class files could be easily redirected

feature could let an applet crees inside a firewall and collect statutics or other reports that were stored as image files. It also could ferret out class files with information such as database names, host names and field

SLIPPING THROUGH The problem is definitely in the implementation," said Michael Bernard, Microsoft's product manager for Internet Explorer, which has about 15 million users. "No one subverted security or anything. When developers write code, things can slip

Remand said Microsoft expects to have a patch for Windows 3.1 users by this week and for Windows 95 and NT users soon after. He said the fix will be included in the upcoming version of Internet Explorer 4.0. "It's important to distinusish between JDK problems and imtation problems," said Eric Chu, JavaSoft's product manager for the JDK, "We are

working with Microsoft to clear this up."O A small fraction of soft

ality. Page 90

County, IBM settle outsourcing

N.Y. officials reach compromise on pact

By Thomas Hoffman

WESTGHESTES COUNTY, N.Y., officials and a labor union have settled their dispute over an BM outsourcing contract that has been a political

month, settles several lawsuits filed over the \$84 million contract. It lets IBM keep the contract until the end of the year and lets 19 displaced inform systems employees return to work

Whether IBM tains the contract longer will depend on 1998 budget decisions, said mty board men George Lattimer. He

called the settlement a e county's IS services from going down the and political problems that govunty's elections this fall.

estchester County Exec

Andrew O'Rourke awarded a

in Jamaary JCW, Jan. 27j. Most the county's 100-plus IS or ployees were offered jobs wi IBM. But some weren't, as some opted to fight the move. After the employees' ed a legal com

ent. The ju the country's d grants that auth

III become much or

Mortino a at four months, but there are no guarant



Java kit to challenge speed of C++

CUPPRITING, CALIF

SUN MICROSYSTEMS, INC. M gearing up to take on the legiof critics who complain that Java is too slow and weak for building mission-critical business ap-

The next version of Sun's Java Development Kit, which develrs use to build Java applicaens, is slated to improve the ed of relatively slow Java apas development powerhouse

The upgraded kit - which alio is expected to have security ments - will come out at year's end, Sun officials told sterworld last week "That's great," said Patrick

Connolly, vice president of the met Finance Group at Neu ral Applications Corp. in San rancisco. "Any time increased peed is involved, that's great e the developers and for the

people hanging around waiting for their applications to run." The speed boost will come om the addition of a "just in time" compiler to Sun's Java virrual machine, said Eric Chu, the Java Development Kit product manager at Sun's JavaSoft divi-

The speedy compiler was pur-chased from tools developer Symantec Corp.. Chu said.

He said developers will also be able to customize their secu-

That would be great for us," said Tripp Johnson, manager of new technologies at First Ten-

phis. "It's important to be able make certain restrictions for different kinds of applets and applets from different people or companies. If you have any doors just a little open, some hacker is going to find it."

AND THERE'S MORE
Sun officials disclosed several other technology enhancements

that are on the way ·Version Lt of Sun's Browner is 'slated for release browser, designed for nety ing reworked so it can use lave rans, which are reusable chunks of Java-based software. olnfoBus, software that con nects components so they can exchange information, is expected to come out this month, rhaps as soon as this week The technology is being codevel-oped with Lotus Development



In this issue

- SAP users link everything but the kitch on sink to R/L
- Apple user groups pender their future as membership declines.
- races Windows NT, making OS/2 users even more nervous about its
- norm abandon open standards re-irements in their quest to optimize ap-

- Money matters, but it's not the most mportant use of the Web, Maryfran
- Lowenite will worsen the skills short-age as IS pros become professional ex-pert witnesses, Peter G. W. Keen worns.
- les Job, Stove -- you're rotting Ap faster than ever, David Coursey and David Moschella argue.

- CORPORATE STRATEGIES
- caused by 127 accursitions in one war.
- 37 Vendors are liable, in some cases, for year 2000 conversion work. But only the fine print shows which ones.
- Tochnology projects require political will as well as time, money and expertise.

THE INTERNET

- Office suppliers save time and money for buyer and seller by pitching high-volume_products online.
- THE ENTERPRISE HETWORK
- MatiensButt everbasis media

- increase their influence over Microsoft. SOFTWARE
- SAP Incorporates supply-chain management in R/3, possibly saving money
- for users who wast for it. Shipping company amounts —— for sales staff by automating chaotic
- SERVERS & PC:
- se to deliver RISC performance at PC cost.
- eggodized notabooks deliver per mance in rough conditions. BATA WAREHOUSING
- stabuse quality threatons to crash Users take storage devices into con-sideration in warehouse projects.

FEATURES

LEADERSHIP ears bring an entra benefit when shop ping for IT products. Follows page 32

MANAGING

- IS architects need applications that SPECIAL REPORT
- ality coats, but how much? Find out, plus how quality can pay for itself.
- Exports tackle the question of whether vendors deliver IT that's "good enough." Domand surges for quality profession
- als, who make up only 3% to 5% of soft-ware jobs in the U.S.

w to contact CW.

Visual tools key to **Chrysler cost-cutting**

Chrysler

By Thomas Hoffman

ADVANCED HOMEGROWN VI sualization software beloed Chrysler Corp slash eight months and \$80 million from the development of its nextgeneration LH family of large cars, compared with its first orneration LH models in 1002. The computer-designed 1998 LH models, including the Dodge Introped and Chaysler Concorde, will roll out to showrooms this fell

This is the first time the Auburn Hills, Mich., automaker has developed a full family of cars exclusively by using computers, said Michael Crawford. an executive for advanced vehicle engineering at Chrysles

The \$2.1 billion LH develop ment effort took 11 months: the first-generation LH models required so months

COMPETITIVE EDGE Chrysler's cutting-edge use of technology to develop its LH models "has put it further ahead of the [other] Detroit boys," said Giscla Wilson, an analyst at Advanced Manufacturing Research, Inc. in Boston.

Getting manufacturing and engineering teams to work together while they are designing cars "can avoid an awful lor of delays," Wilson said.

Chrysler has used IBM's Cata computer-aided design software to help it build cars since 1989. But it was Chrysler's homegrown Data Visualizer, a Unix-based tool written three years ago in C++, that helped the automaker's engr neers visualize the cars as they were being developed and re-

solve design issues almost in

mediately Car development, Crawford said, "is a massive jumble unless you're in synch on data visualization and mock-up.

For example, before using the visual software, it took Chrysler three weeks to "mate" a car assembly with a chassis on a 1993 LH model because of a wide variety of interference points that had to be resolved. said Art Anderson, manager of advanced vehicle engineering at

Using the visual tools. Chrysler engineers could review design proposals and identify all interference points between assembly and chassis within 15 mmutes, Anderson said. The big thing with the visu-

alization tool is that there's no ambiguity about (engineering work that's] being done." Anderson said. Once an engineer makes an electronic design modification, the changes are automatically sent to every one of the large-car division's 760 engineers via electronic mail. Data Visualizer also helps

Chrysler synchronize engineer ing with manufacturing more effectively. As recently as a few years ago, it was common for Chrysler to have physical mockups that were two months behind the latest engineering designs. Crawford said. "One hand didn't know what the other was doing," he said.

Now Chrysler requires all of its suppliers to use the system "so that we're all on the same page," Crawford said. He said he was unsure how much Chrysler spent to develop the vasualization software.

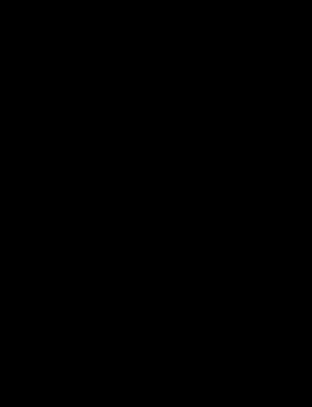
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Visual tools key to Chrysler cost-cutting

By Thomas Hoffman

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The \$3.t billion LH development effort took 31 months; the first-generation LH models required 39 months.

COMPETITIVE EDGE

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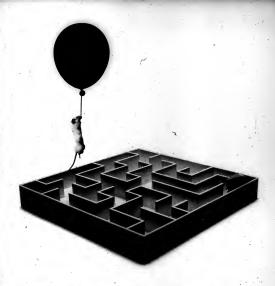
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Grocer registers year 2000 suit

. Believed to be the first of its kind - but not the last

Sv White Work

A MICHIGAN produce store has filed what is believed to be the first year acco-related lawsuit, because its cash registers freeze when customers use credit cards with year 2000 expiration

Produce Palace Inte in Warren, Mich., recently sued Tec-America Corp. in Atlanta and local service vendor All American Cash Register, Inc. in Inhister. Mich., claiming the iming the companies sold a defective computer system they knew they

wa fire The lawsuit asks for about \$100,000 in damages for the cost of the system and tens of our claim to make, and other

The Produce Palace suit fea-

tures two particularly interest ing issues, said attorney Dean forehous Jr. at law firm Thelen larrin Johnson & Bridges in San

Francisco. "It ines relatively recent hardware and software, and that debunks the myth that the year 2000 problem applies only to legacy and mainframe systems," be

The other is there's an allegation that there was a misrep resentation [about] whether the system could be made war 2000-compliant. That's a sen-

thousands of dollars for lost vendors may have to deal with those types of claims," More hous said

The suit debunks one other myth, said William Ulrich president of Tactical Strategy Group, Inc. in Soquel, Calif. "Most prople assume when the lawsuits start flying

it's the Fortune soo compa suing the big systems integrators or other Fortune 500 companies," he said. In the Michigan suit, the store wners claim that their comput-

er, installed in 1995, has crashed more than 100 times, rendering to cash registers useless during the crashes, said Brian Parket attorney for Produce Palace

"Someone fills the cart up. comes to the cash register and finds their card is rejected, and they're embarrassed and angry. Parker said. "[The store owners] lose the customers for the rest of their business life." Tec-America officials didn't

geturn telephone calls. All American Cash Register officials declined comment on the case, but said they are still work ing on a fix. In the meanton store owners Mark Yasike and Sam Katz are now processing year 2000 credit cards by hand.

That could amount to a lot of rards. Credit-card. compan and banks have exacerbated the year 2000 problem by issuing cards with year a000 expiration dates. Visa U.S.A., Inc. stopped producing them last year when ousinesses had trouble process ing them, analysts said.

MasterCard International, inc. warned member banks not to release those cards, but some

have ignored the warnings About 40,000 people, less than 1% of MasterCard's 400 million cardholders, currently have cards that expire in the year 2000, said MasterCard spokes

man Ed Dixon Visa and MasterCard are testing to make sure card readers are year 2000-compliant. About 98% of the 13 million businesses that accept MasterCards are compliant, Dixon said

As the year 2000 creeps closer.

analysts said beleasuered busi nesses and angry stockholders will bombard the courts with more lawsuits. Morehous predicts those lawsuits will total about Sr trillion.

Stephanie Moore, an analyst at Giga Information Group in Cambridge, Mass., predicts the suits will come from two camps: sinesses that claim the prod uct they purchased is defective; and shareholders, who in the face of lowered profits sue com pany executive boards because they didn't solve the year agoo

The Michigan suit is a wakeup call to corporate America. Ulrich said. "Businesspe don't seem to be able to fathom the seriousness of a problem until it turns into a real liability And a lawquit is a real liability.

Moore's advice for informaion systems managers is to fix their computer systems first and lingate later. She also recom date users even as they get more mends that businesses write let ters to every hardware and soft be said. "They are a pain. There ware vendor they work with to are communies that work in say they expect the products to outers and those that work be year 2000-complaint and exwith computers. We are the latpect the vendor to pay for the ter. While [information technolcosts. Otherwise, she said, you ogyl is important here, we don't waive your right to future litiga-

Users link everything to R/3 but the kitchen sink

By Randy Western

based chemical manufacturer. has completed about 75% of its R/3 installation and already has SOME COMPANIES are starting to use SAP AC's P/s so the complans to link non-R/s health, enment and safety, plant conterpiece of their corporate comuting systems, booking nontrol and document management R/s applications into applications to R/y's human re framework of the R/s client/ irces, financial and manufac turing process control modules

What this is doing is making You don't care if you are in SAP both an application fur one software system or not tion vendor as well as an infra-What you care about is the abili ty to get information when you structure vendor," said loshua Greenbaum, an analyst at Hurwant it and where you want it witz Group, Inc. in Newton and in the form you want to see Mass. "What Jusers] are doing is "staid Robert Rubin, vice prenot necessarily pure R/3 any ident and chief technology offimore. Usually there is an R/3 elcer at Elf Atochem, "Having ement, but you can have things centralized data in R/3 - and that are not R/s that use the the investment that you have in name data and the structure. SAP's system, it's just attractive Elf Atochem North America. to consider SAP as the means to Inc., a \$2 billion. Philadelphia

do that R/s users heading to SAP's user group conference next week in Orlando, Fla., will see vendors demonstrate everything from fax software to plant opera tion control software that was designed specifically to link to

And SAP is helping, too, with interfaces designed to make it ier to connect other vendors' software to its product. But users will still need to do some work themselves, such as building interfaces to legacy systems that may not already have R/sready interfaces.

Greenbaum warned that users risk the loss of flexibility if they adopt an R/3-centric approach. "For users, it's nice to



for them and make good on all this connectivity. On the other hand, everything you use has to he compliant with the R/s vision of how things are done. That was a price GATX Capital Corp. was willing to pay. The \$5 billion financial services company will wrap up its big R/s installation by year's end

The San Francisco firm is so de termined to keep as much as possible of its business process es contained in R/3 that it is will ing to build functionality - not provided in the SAP package -

into R/x "What we've done is taken leasing transactions, which are nothing more than compound sets of other basic financial transactions, and put them to-

gether in a complex way," said Chief Financial Officer Michael Although be wouldn't reveal the cost of the project, Cromar said it still costs less than having

to build from scratch. He also said tying in third-party packages to handle the work wasn't something his compare wanted to push on users.

want it to be everything." Corrections

sophisticated using the system,

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ANKLY SPEAKING The high cost of thrash

FRANK HAYES

HE ACAD SMICS are looking for that missing productivity again. This time it's the University of California at Irvine that will spend \$643.637 of your tax dollars trying to fig-ure out why, after investing trillions in ination technology over the past cou-

normation recinionly over the past cou-ple decades, the productivity of U.S. businesses is still flat. Actually, that im t a bad price for a three-year shudy that will cover 200 U.S. companies along with data from 50

But here's a tip for the researchers: Instend of searching for places where IT

productivity is created, try hunting for the holes where it drips away. Maybe, just maybe, the trouble is the high cost of thrash.

Got Windows NTP Did it replace Windown 95? Did you have every version of ws 3.x before that? Have you upgraded your word processors and spread-

sheets regularly? How about your Web browsers? And your development tools — Visual Basic and PowerBailder and whatever Web-page editor you're using

this week? That's thrash — the unending cycle of

upgrades that keeps software vendors swimming in profits and corporate users drowning in unproductive labor. Think about it: How much time did IS

spend on those upgrades? How much user work time was lost during installation? How much time was lost during training - whether it was in a classro or users just trying to figure out how the

new software works? How much extra time and money did you spend because the upgraded soft-

ware didn't play nicely with other applica tions, requiring more upgrades, work-

arounds or fixes? ers walked away be How many custo cause a clerk couldn't work the new syspetting their work done. They're just do-

tem or a cust agent got backed up on calls or a salesman couldn't reach data he needed to

That's the cost of thrush. And oddly enough, lots of IS shops have figured out the problem without any academic studies.

They've figured out a solution, too Slash software upgrades to the bare mini

mum required to get the job done.

Two wars ano. 80% of corporate sites redicted that most of their users would be running Windows 95 by now. But only 13% of corporate desktops were actually running Windows 95 as of this spring,

according to a survey by Forrester Research in Cambridge, Mass. Apparently, somebody decided not to de after all.

No Windows or means no Office of or Office 97 upgrades. No 32-bit application upgrades at all, in fact. No beta-of-themonth for Web browsers. No rush to grab new versions of development tools.
Those users running "obsolete" software are still processing words, juggling spreadsheets, browsing Web sites and

ing a bit more of it, becau they don't lose so much time to thrush.

How much are low-thrash shops saving? Maybe the Irvine researchers can find out, but a conservative guess is that for every dollar you don't pay for an up-

grade package, you'll save at least \$10 in installation, training and support costs. Of course, not everyone's happy that productivity is up and upgrades are on. Some users really miss having the latest toys. And those upgrades not taken are taking their toll on software vendor revenue - even Microsoft in warning that its money machine is downshifting from overdrive.

If vendors want that business back, they'd better start cranking out upgrades that are worth a lot more than the cost --Otherwise, they're out of luck. Because smart 15 shops are taking out the thrash. And there's nothing academic about

Hayes is Computerworld's steff columnist. His Internet address is frank_ haves@cu.com.

Microsoft joins smart-card race

Idicrosoft Corp. amounted it will distribute a Smart Card Software Development tilt with application pro-gramming interfaces for developers who want to write ameri-card applications for Windows-based machines. ilicrosels's announcement came on the heats of visa sarrational, inc.'s unveiling of plans to use juri-sed smart cards with technology from Sun Microsys-ems, Inc. [CW, Aug. 4].

Fidelity emphasizes Web

Mutual fund giset Fidelity Investments is using the twin carrels of desper discounts and customized ner-vices to entice customers onto the World Wide Web. For the past several months, Boston-based Fidelity has prothe past several meeths, Section-Issued Fidelity has pro-vided deep discounts to customers who conduct tetur-nut-byand trades, mid Voorge G. Hothway III, a Fideli-ty vice president. Spanking at Internet Expo lest with Hothway mid Fidelity plans to give clients. Web-barnel access to accessed data, including stook to analyze pro-spective investments and references teconories.

Bell Atlantic/Nynex deal is done Bell Atlantic Corp. and Hymes Corp. are new one, folmm numms. Corp. and stymm corp. are new one, not-lowing last weaks approved of the merger by the Fede-el Communications Commission. The Sig-5 billion deal was first announced in Agrid 1996. New York-based bel-Allantic, as the company will be called, will serve 40-million telephone accuss lines and 5,5 million wireless customers in 19 and Westingston.

Hackers put 'net mail in a BIND exactly notes in some internet domain-name pollutre have let backers hiject data being seet across the tris-net, the Computer Energency Response Team at Com-gle Melion University seld. The problem involves vel-nerabilities in the Backeley internet Name Pa-

D), which allows into net addre sentad by words Anisaed of numbers. The problem has been fixed in new releases of the software. SINO runs on a wide range of Unix platforms, lockeding those from HMA, Hendelt-Packand Co. and Sun. An advisory is posted at flp://arfs.cert.org/pub/sort_advisories/ CA-97.22.bind.

Software distribution pushed

icrosoft and Marimba, Inc. in Palo Alto, Calif., is proposed the Open Software Description (OSD) for-mst, which they hope to make an industry standard used in software distribution over the internet and in-transts. The OSD specification, for use in push technol-ogies, sines to provide a standard format for describing software components, their underlying structure and their relationships to other components, according to Microsoft. The specification has been endorsed by vendors such as Letus Development Corp. and Natacapa

Oracle's Sedona effort dies

Oracle Corp.'s object-oriented programming environ-ment, code-named Sedons, is officially dead after the mpany decided it wouldn't produce zero-ministration thin clients. Following an intensive invastigation of the project that was launched three years age, Oracle decided to pull the plug, Oracle officials said. Oracle had put the Sedons project on hold saveral weeks age. Elements of Sedons will be included in the eloper 2000 and Designer 2000 tools.

Aberdeen: Netscape star fading

Notscape is losing its ability to influence Fortune 1,000 companies, according to a report by Aberdeen Group, Inc. Once the undisputed star of the Internet world, and Sun to sell products to large companies, Best

based Aberdeen sald, Netscape's SuitsSpot, which in-cludes electronic-mail and directory servers, makes the Mountain's Veny, Califf., company a compatitor to its partners and hunts Netscape, Aberdeen sald. Netscape rejected the findings, soying that its sales staff recently won business at zoo information systems shared.

Feds called on Web ad rejection

Web-based telephone directory publisher Serischboord, les: is saling federal efficiels to investigate agreement among Naticacy, Whoo, Inc. and the five regional lest operating companies (NEOC) for potential antivest vis-lations. Official as Westchee, Massa, said Netscape recently miscaled Switchhoard and be cause of an exclusive selectulary agreement between Yeboc and the NEOC on Netscape's Web site.

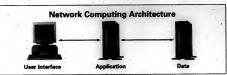
SHORT TARES Bill belay occurates in high-and Algano RicC systems, dan in meth soft need and Algano RicC systems, dan in meth soft need and Algano RicC yellows, dan in meth soft need and Algano RicC yellows, dan in the Algano and algano Algano single single single yellows and algano Algano single single single yellows and algano single single single single yellows and algano single single single single single single single single delivers. This control formation the single called a lower of the single single single called and the process of the single single single called and the single single single single single called and the single single called and single called and the single called single called and single called and the single called and single called and single called and the single called and single called and single called and the single called and single called and single called and the single called and single called and single called and the single called and single called and single called and the single called and single call Octobe, Revisionar UBBNes Service Dr., will bugin a service that will be it zo million customer in Messa-chaesta and Committion view and pay their admit-tion over the Wist. — Geospher Antendre Inter-tion of the Committee of the Committee of their and feel Microsoft instruct information Server and fincharge and Server. It SEC Corp. In regulation, Messa, in whipping on option to its IEEC Data Manager depar-ment law of the Committee of the Committee of the control of the Committee of the Committee of the service of the Committee of the Committee of the Committee of Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Service of the Committee of the Committee of the Committee of the Committee of the Comm

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Apple user groups try to stay informed, keep members

By Kim Girard

SEVERAL Apple Computer, Inc. user groups across the country last week said

they are struggling to stay informed so they can continue to advise members after the chaos of the past several months "We're in a wait-and-see mode," said

John Saling, secretary and treasurer of the Wichita Falls Area Mac Users Group in Texas, "Everyone's wond hur. You don't know what to do. Every-

body's totally confused." "I would not be surprised by now if we started to lose a few [Apple] user groups." said Nathan Nuttall, an analyst at Sher-

wood Research, Inc. in Wellesley, Mass. In some areas, the fallout from Apple's mward spiral has been severe. For example, the relatively small 63

member Mid-Cities Macintosh and Newton Users Group in Texas is on the verse of closing. Apple Corps in Dallas has seen its membership dip from 1,000 to

about 600 this year.

The Portland Maximtosh Users Group membership has declined from 1,100 to 1,000 members over the past several years, president Charles Devore said. Devore blames Apple's marketing rather than its internal corporate turmoil and financial problems for the decline.

"When Apple doesn't do good advertising, new people don't buy Apple comput-

ers." Devore said. Some smaller groups are falling away because of a lack of volunteer supp and disenchantment with Apple's

But Chris Kilbourn, president of the 80-member Apple Network Managers Association chapter in Seattle, said some user group problems sound like sour grapes. "It's the same people who were oing Bill Gates at Macworld," he said. referring to the users who were angry that Apple accepted a \$250 million invest-ment from Microsoft Corp. [CW, Aug. 11]. "People don't understand that Apple is a business. It's not our brother, our sister

or our religious savio But it is the business aspect that has some users saying they are concerned about Apple's long-term prognosis. Oth-

ers said they don't believe Apple cofounder Steve Jobs "I would not be surhas been forthcoming about the Miprised by now if we crosoft deal, including details about started to lese a few how much Micro-

soft paid for Apple's intellectual proper-[Apple] user ty. They also quesgroups," tioned Jobs' faith in the company fol-- Nathan Nuttall.

tion that he sold 1.5 **Sherwood Research** million shares of Apple stock June 26, just days before former Chairman and CEO Gilbert F. Ame-

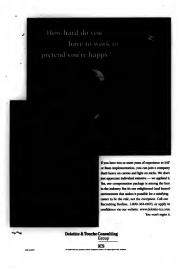
"If he knew Amelio was out the door [when he sold the stock], then I am really worried," said Ann Wrison, executive director of the influential 12,000-member Berkeley Mac Users Group in Berkeley,

Calif. 'That means he doesn't think he can turn it around." Jobs, meanwhile, continued a fiscal crackdown last week. He eliminated the company's sabbaticals and downgraded employee severance packages. He also established new stock options to help boost morale. The changes came amid Apple's announcement that it won't be profitable in the fourth fiscal quarter, ending next month. Sales also aren't ex-pected to rebound until next year.

Still, several user group representives said wild Apple stock fluctuation recent weeks don't faze them "The stock will take care of itself if Ap-

ole straightens things out," said Richa Meyeroff, a former board member and an instructor of the New York Mac Users

Meyeroff said the 4,000- to 5,000member group is climbing back from a low point last year when it almost shut wn because of management prob-



Oracle8 Database Messaging

vs

Microsoft Exchange Email

2,500 Oracle InterOffice Users on 1 NT Server



Database Messaging: 10-times more users than Microsoft

2,500 Microsoft Exchange Users on 11 NT Servers*

Data from Microsoft funded Zona Research study

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Mad for mainframes

Big iron pioneer Gene Amdahl to offer super-cooled CMOS processor

By Tim Ouellette ATLANTA

MAINFRAMES ARE COOler the ever. And if Gene Amdahl

comes through on his promise, they'll get downright freezing by Amdahl's

rcial Data Servers, Inc. (CDS) in Sunnyvale. Calif. is developing a supercooled CMOS mainframe processor that the 74 year-old mainframe er claims will initially notch speeds up to 160 MIPS. Dubbed the CDS-1, the uni ssor systems are expected to be ready for shipment by the

"It is great to see som else coming into the ma market," said David Floyer, an analyst at International Data Corp. in Framingham, Mass.

middle of next year

he more pressure put on the likes of IBM and (Hitachi Data Systems Corp.), the better.

ROCESSOR SUPPORT But the one drawback is that at first, the CDS-1 won't support more than one processor. That

could limit its use to niche applications, such as large batch op-For example, although a 160 MIPS processor would chal-lenge the dominance of Hitachi's Skylines at the high end,

the Skyline --which combin air-cooled CMOS chips with older bipolar technology — can ort eight processors Hitachi has grabbed a 20% are in the mai drame market thanks to the Skyline and user and for larger processors Still users see potential for

"And from a faser perspective, the proposed mainframe, especially if CDS can build in support for multiple process If they can make the CDS-1 play in a parallel sysplex (a

mainframe cluster], there are lots of older database systems that require these type of high sneed engines," said Douglas Mackie, a vice president at Zurich Insurance Group in

Schaumberg, Ill And CMOS processors cost less than Hitachi's Skyline peo-

"If they can support multiprosing, then [the CDS-1] would be egod to install, so you don't have to depend on just one vendor," Mackie said. CDS's special cooling tech-

logy uses helium gas to bring the CMOS processor down to minus 200 degrees Celsius That speeds processing without requiring additional power to ntain the system.

"CMOS chips run faster when they are cold, so with our technology, you can keep power supply at the same level while the speed can come up to three times more," Amdahl said in an interview last week with Compu terworld at the Share technical conference in Atlanta

Amdahl said that within three years, his method could lead to a uniprocessor capable of being manager of client/server techni-

ared in BIPS — billions of instructions per second - instead of the current MIPS. The cooling process is wellknown, and other vendors such

MARKES

as IBM have similar technology that they also can bring to bear in the market, analysts said. But IBM has focused more on its mainframe clustering technology, called parallel sysplex, to provide scalability and availabil ity, rather than develop large

uniprocessors (see chart) Although there are oth proaches, "Gene Amdahl is the

first talking about doing this with chins," said John Young director of enterprise systems planning at The Clipper Group. Inc. in Wellesley, Mass. "He has a head start on the whole market

A lot will depend on the suc-cess of CDS's first machine. a low-end, c-MIPS mainframe positioned as a year 2000 testi



AIX. There will be a six-month

lag before they ship for OS/a rp Servi



st for Windo we NT and IBM's

Walking fine line between NT support and OS/2

at last Amount Corp. in 1975

BIG IRON OVERDRIVE

150 250

By Lawra Di Dia SAN FRANCISCO

IBM IS WALKING 2 tightrope. The company has emi on a strategy to sell middleware for rival Microsoft Corp.'s Windows NT platform even as it tries to reassure restive custo ers that its commitment to OS/a Warp Server is unwavering.

The issue flared anew here last week at the Windows NT in tranet Solutions trade show during an IBM press conference to sunce five new middleware packages for Windows NT. ne Attal, IBM vice pe

dent of NT marketing, cited Inational Data Corp. statistics that show Windows NT Server ments outpacing those of OS/2 Warp Server by a 3-to-z margin this year. Attal said IBM has an all-out initiative to develop "middleware, hardware, services and technical support for the Windows NT platform." In some cases, IBM will deliver the

1,000

ahead of the same facilities on OS/a Warp Server, according to Attal and Donn Atkins, vice resident of marketing at IBM's Personal Software Products Dirision in Austin, Texas, which owersees OS/a

Attal reiterated IBM's strategy to narrow its focus for OS/2 Warp Server "from a massmarket (operating system) to one that is targeted at existing mers and new large accounts in the banking and finance industries

IBM's efforts have some users confused and nervous. "It's making my stomach churn and shaking my confi-

dence," said David Knight.

cal services at Trustmark National Bank, Inc. in Jackson, Miss. He said he fears IBM will pull the plug on OS/a Warp Server, "How much money and how many resources can IBM realistically pour into two competing operating systems? And how many OS/a Warn sites are

they losing each day? Nobody knows." Knasht said. ---Knight said IBM's bedging

means that "it's no longer a giv-en that I will so with OS/2 Warp Server as my loperating system) when I upgrade within the next

Doug Mitchell, an attorney and information systems man ager at Dickerson, Dickerson, Consul and Pocker a law firm in Las Vegas, concurred, "I recog nize that IBM may leave me in the lurch. Anyone who says they're going to unequivocally stick with OS/2 Warp Server in the face of this confusion needs a serious reality check," he said.

Not so. Atkins said. "IBM continues to invest in and enhance OS/a Warp Server, and we'll release a new version in 1998," be said

is bow IBM will resolve which platform takes priority when it comes to delivering add-on mid dieware, leading edge services and emerging technologies.

Atkins claimed that "os% of all IBM add-on software and hardware connectivity of nents are shipping for the OS/2 Warp Server platform." Even so,

It is that juggling that has users' nerves jangling.
"This could affect my future purchasing decisions. If I need a ucial function right away that's only available on Windows NT or Unix, I won't wait oths for IBM to deliver it on OS/2 Warp Server — I'll go buy NT," Mitchell said.

Hit's commitment to Windows III

ts a SIO billion market for Windows NT per

The company has 9,000 developers worldw to building Windows NT and Links assets allow

. All IBM developers are being trained on Windows NT BM has 1,200 technicisms worldwide of Whydows NT susport and has nearly 6

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IS finds ways to monitor apps

Drive to ensure service kills standards wait

By Patrick Dryden

UNDER PRESSURE to gr tee client/server service levels to their users, information systems managers aren't waiting for standards-based products. Instead, users are taking advantage of the many emerging options that enable them to

asure application response time, despite the fact that none the products meet buyers' ingrained require-ments for open-ness and inter-

operability founded industry sten However. rog con

surfaced last week. alvets said posed extending data tables in the Remote Monitoring 2

mon a) application-oriented network monitoring specifica tion to clock the flow of traffic. Other application metering approaches also promise eventual

We peefer standardization but I'll take whatever perfor mance data they can give me," said Patrick Meyers, a network manager at Ceridian Emplayer Services, Inc. in Bloo-IT workforce

CONTINUED FROM PAGE 1

high-paying vendors and con

sulting firms that snap up

Consulting shops are "drying

up the market," said John G

Stevenson, vice president of IT

at Lennox International, Inc., a

Dallas-based heating and air

conditioning equipment maker. Several chief information offi-

cers said the talent crunch is a

catch-aa: IT consulting and ser-

vices firms drain the technical labor pool, which forces corpo-

rate America to rely even m on consulting shops to install

loc. applications.

hot software packages such as

scarce IT talent.

The payroll processor already applies NetScout's monitoring probes and analysis software to sure round-trip delays across its 50-site wide-area net work to discover which applications cause slowdowns. Meyers said he is confident that Net-Scout can push adoption of its application response-time ap

preach as an Rmon a standard. "NetScout's propoeal is great, but it won't change the number who will adopt their tools," Mark Bouchard, an analyst at Meta Group, Inc. in Westport, Conn.

Right now. every tool is proprietary. yet users accept that fact and go forward." Underwriters (AIU), "we're

coping for now" by applying a variety of tools to break down lication activity so that central information systems operators can gauge response times. said Mike Altiero, s network serrices manager at the global insurer in Livingston, N.J.
"We're getting requests to

easure response times, but we're being careful to balance standards cost and need " Altic the ones doing the most work in

oec areas

as Java and Windows NT.

Pate, recruiting director at Ernst

& Young. She said her firm has

nologists this year alone

cessfully landed a ooo tech-

The money isn't too shabby,

either. At a Computerworld re-

cruitment conference in June,

recruiters from consultancies

offered signing bossuses of

users have trouble matching.

such a hard time staffing posi-

mance analyzers include Eco-Scope from Compuware Corp in Farmington Hills, Mich., and WireTap from Platinum Techpology, Inc. in Oakbrook Ter race, III.

To measure transaction proesses more accurately, Hewlett-Packard Co. and Tivoli Systems, Inc. promote application proming interface (API) calls for inserting timers within a

program or module. Such options generate lots of interest "because IS folks are etting hammered by users and by managers, so they're willing

to forsake the ideal of open. standard products for tools that do the job now," said John president McConnell Consulting, Inc. in Boulder, Colo

The management software marketplace tends to turn over frequently and fails often in its standards efforts, said Ray Pa quet, an analyst at Gartner Group, Inc. in Stamford, Conn. He recommends tactical solu tions with short-term return on investment that sobre 15 manage ers' need to ensure the availability and responsiveness of appli-

"Open is a one-word oxymoron in the management arena." Paquet said. "It just means you published your own API and

will let everyone else write to tions - contractors and con

She said Ernst & Young of tin. an IT manager at Public Serferred her an attractive salary and vice Co. of New Mexico, an nsive opportunities to learn electric and gas utility in Albu-To fight back, corporate IT

One factor is that recruits shops tell recruits they have such as Devaney believe they more family-friendly environwill get a wider variety of oppor ments than consulting shops tunities in consulting than at a can offer. IT departments offer traditional information systems less travel, shorter hours, upshop because consultants work ward mobility into management on multiple assignments. The positions and the opportunity to No. 1 fear of today's college stu work through an entire project lents is boredom, said Connie

life cycle. Public Service Electric and Gas Co. in Newark, N.J., typically hires independent contractors for three-month engagements evaluates their performance and then moves in for the kill. "If we like what we see, we work hard to bring them on board," said Glenn Ropers, vice president of

\$4,000 to \$40,000 - figures IT at the utility. That approach has helped that cost-conscious corporat PSE&G plug as new technolo-'That's why we're having gists into its 375-person IS staff

this year. []

TECHNOLOGY ISSUES SURROUNDING CRASH OF FLIGHT BO1

- ort tow-altitude warning software covide around the airport instead of the re
- 8 Airport glide slope system, which advises pilots on

FAA orders airports to check tracking systems

> Warning system might have prevented crash

By Skaron Machlis LOW-ALTITUDE WARRING

vare wasn't working proj ly when Korean Air Flight 801 crashed into a Guam hillside earlier this month, investigator say, prompting the Federal Avia tion Administration to order U.S. airports using similar ment to check their sys-

Test results are expected as early as today, according to an FAA mokesman. The malfunction in the Mini

ours Safe Altitude Warn System (MSAWS) didn't cause the crash, which claimed more than 200 lives. But the syst might have prevented the trag dy by warning air-traffic con lers that the plane was flying too low s National Transportation Safety Board (NTSB) investigatants pay better," said Jim Martor has said.

PIED SYSTEM

The Guam MSAWS system reently had been modified to stop it from issuing too many false alarms, according to media renorts from the scene, and an error was included in the new code. As a result, the warning system was covering only plan flying within a mile or so of the airport instead of the 62-mile ra-

dius it is supposed to. It isn't yet clear whether the MSAWS failure was an isolated programming error or more evetemwide. "It's probably a local screwup," said Robert Charette. president of ITABHI Corp. in Fairfax, Va., a risk-assessmi consulting firm that has worked with the FAA. "But what are the national procedures to assure

these things are working?" The FAA has been heavily criticized on a number of technology fronts. Air-traffic controllers continue to rely on out dated, deteriorating computer equipment, while systems modernization efforts suffer long delays and cost overruns

In March, the U.S. General Accounting Office blasted FAA isition proces as "ad hoc, sometimes chaolic. ... No software project teams measured or reported taum agement on the status of activities performed, and man ment never wrifted that critical activities were being done."

Air-traffic controllers continue to rely on outdated, deteriorating computer equipment, while systems modernization efforts suffer ione delays and cost

The airport altitude warning oblem in the past, according to Richard Swauger, technol coordinator for the National Air Traffic Controllers Association Washington. "MSAWS had pretty much done what it's sup posed to do," he said. "It's a pretty reliable piece of equip-

The controllers are worned more about aging traffic-manment systems they still must use and what they consider design flaws with proposed re cements, Sunuger said. For example, the new systems will use touch-screen menus that force controllers to take their eves off radar scopes to type multilevel commands. Swauger said. The existing system uses buttons that controllers can feel without looking down. The FAA said the system in

the U.S. remains safe, and new equipment will increase reliability. But Swauger said time is numing out. D

SAP AG's R/3 and PeopleSoft, Devaney, a graduate of Geor-gia Institute of Technology in Atlanta, explained ber decision: "Most of my interest was in the Internet, and I had a preconceived notion that companies like Sun and consultants were



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missive purportedly from a Samsung attorney claiming fraudulent and actionable transgressions" on the reconent's part. Two of Samsung's Web-hosted clients - La Costa Resorts and Bos Doe Sportswear - also had suggestive and misleading advertising messages sent out with their names at , masked.

me this buys lists of E-mail addresses from someone," said Sang Cho. Samsung's in-house counsel, in an interview with Computerworld. But the company doesn't know why or who holds the gradge. It intends to file card and common charges when the perpetrator is un-

that recipients would be mon likely to open mail from a prestagious firm than an ordinary Internet marketer. Such mail is hated by recipients and is a bane of Internet service providers

FIGHTING BACK But now the impersonated le-

gions are beginning to fight back. Although there are no resuits in any of these cases yet here is a sampling of businesses going on the offensive with their

Two operators at SFF Net a commercial online service used by science fiction and fantasy writers, have filed sunt in Kings County N.Y. against Carlos Lattin for sending out spamming E-mails with their forced return addresses Their Itwisist claims trademark infringement, unfair competition, defamation and false designation of origin. The plaintiffs used New York laws to make the alleged impreson ator's Internet service provider droulee Lattin's name.

A novice sunk mailer was sued in May by an online floral infor mation service run by Tracy La Quey Parker, an Internet author and education market development manager at Cisco Systems, Inc. Parker opened the site's electronic mailbox one morning in March and saw what Samsung, La Costa and SFF Net have expenemend an avalanche of returned E-mail

and anary letters. shocked by the onslaught." Parker said •Jon Tara, operator of San Diego's Live Net site, has experienced the same problem, but he hasn't been able to track down the spoofing impresonator. He is offering a \$100 reward for positive personal identification

of the spoofer. A message on the site from Tara to the spamming perpetrator says, "I am going to hound you to the ends of the earth once I find out who you are. You will regret having used a Live Net return address. If you are lucky I will never find out who you are. If you are unlucky, I will It will be the worst luck that you've ever had." Tara has fought with a service provider who has stopped shutting down sparmmers and won't provide Tara with identity information.

Service providers won't release names

Although sympathetic to spam recipients, few Internet service providers will give out subscribers' names without a court order. At EarthLink, Inc. in Pasadena, Calif., there are daily postings on the Internet provider's site of spammer accounts that have been canceled. Steve Dougherty, director of Internet operations at Earth Link, said, "These spammers are like cockroaches, and when you

stap on one, others just keep coming back." Dougherty said EarthLink, with 330,000 subscribers nation wide, wor't release the name of a spammer who uses its network to a customer but would probably comply with a legal coder. "We might contest it, but we're a legal entity, and we comply with the

Prodigy, Inc. in White Plains, N.Y., one of the top three online services, notifies spammers that spamming or advertising is a vio-lation of member policy, a spokesman said. A second violation results in a warning, and if spamming happens a third time, tha

mamber's services are termin To combat spammers on its service, UUnet Technologies, Inc. limits the length of E-mail recipient lists, blacklists mail sent from known spamming locations or organizations, filters news postings from sources whose identity can't be authenticated and won't pass

along third-party mail messages to non-UUnet destinations - a technique used by spammers to hide their identities "We allow members to block an entire domain if they don't like what they're getting, but we would never ID the spammer if it was er. That's private information, and wa don't release

it," said Prodigy spokesmon Mike Dorcy. "We don't want to create a vigilante-type atmosphere, so we won't give people names to at-

If the spam's origin is traced to another internet provider's network, Prodegy will contact that provider. But whether it cooperat in releasing information about the spammer is up to that provid-

er's policies, Darcy said. But some providers are more sympathetic to subs Witvax Communications, on Internet provider in Troy, N.Y., started billing customers who send out spam mail. If it can find one porticularly egregious spammer, the provider will hold them responsible for a \$140,000 unsolicited E-mail processing bill. — Stewart Deck

The provider has called Tara's Wheat, an analyst at the Nation al Computer Security Associa-In February, Matthew Seidl, a tion in Carlisle, Pa. Until theo. Colorado University commutes Wheat said, this may be the science student, filed a lawquit price we pay for ever-increasing against Greentree Mortgage and an unnamed bulk E-mailer for allegedly sending out a batch of spam with Seidl's "nobody@

WHAT TO DO? First aid for spamming and

spoofing attacks

I Take the attacks Notify your service

Ask your service provider to partner

with others to track down spammers Notify legal authorities

I Look into authentication and

digital signature technology Consider legal action

vidual," she said. "But until nu thentication and digital signature technology become more widespread. I'm not sure what the answer is We need some sort of claiming privacy requirements. digital Caller ID," said Jonathan

bounty offer "vigilantism."

localhost.com" address in the

From and Return-Path headers.

ing that he decided to take

whatever legal actions we have

to take to restore our good name

and recover the damages we suf-

ferred. We are doing our part

to put an end to this type of

Such attacks are difficult to deal

with, said Nina Burns, an ana

hist at Creative Networks, Inc. in

Palo Alto, Calif. "Wackes have

so much access to information

that it becomes scary for an indi-

'net abuse."

UNI IMITED ACCESS

Live. Net has posted its spom experiences, a reward for information and other helpful advice at www.liva.net/spam.html tached. They, in turn, have been Fake ads are the latest reast in

soundited with complaints. poofing and spamming. The Samsung has been so hard hit Dr. Seussian terms describe an getting 6,000 to 10,000 underhanded sneak attack that E-mail messages per day and tries to get ads in front of as hundreds of telephone calls many unsuspecting eyeballs as worldwide - that the FBI is possible by impersonating a relooking into the matter. Sam consible sender. For example, sung has spent millions of dol-Strong Capital Management. lars on its brand image and des-Inc., a financial services compaperately wants the spamming to m in Menomonee Falls, Wis., is sing a spammer for allegedly

stealing its address, thinking

What is a good solution to Internet spamming

problems in the U.S.? Registry Blacklist Impact fee Government regulation

Don't know/other

We assume whoever is do-

Base: II,198 U.S. Web users



Stung by spam attacks, businesses head to court

gressions" on the recipient's part. Two of Sam sted clients - La Costa Resorts and Big Dog Sportswear - also had suggestive and mis-

ing this buys lists of E-mail addresses from someone," said Sang Cho, Samsung's in-house counsel, in an interview with Computerworld. But the comny doesn't know why or who pany doesn't anow way to holds the gradge. It intends to file civil and criminal charges when the perpetrator is un-

Live. Het has posted its spem experiences, a reward for info

tached. They, in turn, have been

Sameung has been on hard hit - getting 6,000 to 10,000 E-mail messages per day and hundreds of telephone calls idwide -, that the FBI is looking into the matter Sam-sung has spent millions of dollars on its brand image and desperately wants the spanning to me whoever is do-

spoofing and spumming. The Dr. Seussian terms describe an erhanded sneak attack that tries to get ads in front of as many unsuspecting cychalls as possible by impersonating s reonsible sender. For example, Strong Capital Management, Inc., s financial services commy in Menomonee Falls, Wis., is suing s spammer for allegedly stealing its address, thinking

Fake ads are the latest twist in

What is a good solution to Inte problems in the U.S.?



BARRY TLYDR U.S. Web users

that recipients would be more likely to open mail from a prestigious firm than an ordinary Internet marketer. Such mail is hated by recipients and is a bane of Internet service providers.

FIGHTING BACK

But now the impersonated legions are beginning to fight ick. Although there are no results in any of these cases yet, here is a sampling of businesses poing on the offensive with their

*Two operators at SFF Net, a commercial online service used by science fiction and fantacy writers, have filed suit in Kings County, N.Y., against Carlos Lattin for sending out spamming E-mails with their forged return Advesses. Their lawsuit claims trademark infringement, unfair tition, defa false designation of origin. The plaintiffs used New York laws to make the alleged impersonator's Internet service provider divulge Lattin's name. MA novice junk mailer was med

in May by an online floral inforon service run by Tracy La Quey Parker, an Internet author and education market development manager at Cisco Systems, Inc. Parker opened the site's electronic mailbox one morning in March and saw what Samsung, La Costa and SFF Net have experienced: an avalanche of returned E-mail and angry letters. "I was

shocked by the onslaught," #lon Tara, operator of San Diego's Live.Net site, has experinced the same problem, but he hasn't been able to track down the spoofing impersonance He is offering a \$100 reward for

positive personal identification of the spoofer. A message on the site from Tara to the spamming perpetrator says, "I am going to hound you to the ends of the earth once I find out who you are. You will regret having used a Live. Net return address. If you are lucky. I will never find out who you are. If you are unlucky, I will. It will be the worst luck that you've ever had." Tara has fought with a service provider who has stopped shutting down spammers and won't provide

Tara with identity information,

claiming privacy requirements.

The provider has called Tara's ounty offer "vigilantism." In February, Matthew Seidl, a Colorado University computer science student, filed a leavuit against Greentree Mortgage and an unnamed bulk E-mailer for

allegedly sending out a batch of spam with Seidl's "nobody@ localhost.com" address in the From and Return-Path headers. Seedl said in an Internet posting that he decided to take stever legal actions we have

to take to restore our good name and recover the damages we suf-fered. We are doing our part to put an end to this type of

NUMBER ACCRES Such attacks are difficult to deal

with, said Nina Burns, an amalyst at Creative Networks, Inc. in Palo Alto, Calif. "Wackos have so much access to information that it becomes scary for an indi-vidual," she said, "But until authentication and digital signa ture technology become more widespread, I'm not sure what the answer is."

"We need som digital Caller ID," said Jonathan

Service providers wan't release a

res that spomming or advertising is a

Wheat, an analyst at the National Computer Security Associa-tion in Carlisle, Pa. Until then, Wheat said, this may be the price we pay for ever-increasing

Internet connectivity. WHAT TO DO?

- @ Take the attacks
- @ Notify your service @ Ask your service
- provider to partner with others to track down spanners
- # Notify least author

Internet providers fight back against spammers

▶ Weapons range from canceling accounts to legal actions

By Stewart Dock and Matt Hambles

WHEN SPAMMENG impersonators are finally tracked down, it turns out there are several crimes they can be charged with.

several comes two you or carage out was A case pending in New York charges the defendant with trademark infringsment, deceptive trade practices, unfair competition and false designation of orjin. The latter means deliberately mislabelling a product in an attempt to trick people into thinking it came from a more reliable source, according to Stevens

Miller, the plaintiff's attorney.

Miller said similar cases in other states—
such as the

"Mest [service Flowers come case
in Texas — have

been filed for neg-

ligence, trespass,

name for a busi-

ness purpose or

Where a case is

filed can help the

plaintiff uncover

spammer's

New York, for

appropriation a person's

providers] are looking to be supportive, and

most of us are antispam."

Jeff Cartwright
 Planet Access
 Networks

Networks one, has passed a law that lets an injured party with "just cause" demand the identity of a spummer from an Internet service provider to that the spammer can

be named in the lawsuit.

Internet service providers typically won't release the name of a spammer, cit-

ing privacy privileges.

But often they will terminate spammens' accounts and add tools to uncover

mers' accounts and add tools to uncover spamming practices. Jeff Cartwright, president of service provider Planet Access Networks, Inc. in

Stanhope, N.J., said end users may not realize they have legal powers to subpornal Internet service providers for information about who is spannaring them. "Most [service providers] are looking to be supportive, and most of us are antispars." he said.

There have been several instances of aparaming through servers at Planet Access, a regional internet service provider. In some cases, Cartwright said, he has

gone to other service providers in an unofficial way to seek the user name or the real name of the spammer in order to pursue legal action, including service

"I would try to get information from another [service provider] and then contact the person [doing the spanning] and send them an invoice, charging them Say for every user on my server who gets the message," Cartwright said. Some businesses are trying to charge

the spoofed address, or space taken upon on the server. One online pointing advocates a "get even" approach. Its site warns interlopen they will be charged for using the company's server space and landwidth. Those people who send proujunk mail are requesting use of your pope. Bill them for -hours, days or months that the mail site in the account and waits until you retrieve it."

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Web service speeds resume sifting

► Relational database simplifies resume-retrieval process

By Julia Kine

INC. INTERACTIVE SEARCH. Search), a small Los Angeles software and paper resumes into an easily search-

company, is winning over big corporate customers with a one-of-a-kind Internet service that transforms electronic

Motorola, Inc., Texaco, Inc. and TRW,

Inc. all use of I-Search's Private Reserve service. The service receives, scans, formats and indexes thousands of resum sent to the employers each week

Forty-eight hours later, the employer receives back a highly structured relational database that multiple hiring managers can search simultaneously using an Internet browser

The service costs \$5,000 per year, plus \$2.50 per resume. The cost savings, by contrast, can add up to hundreds of thou sands of dollars, users said

"I-Search costs about 10% of the cost of a full-blown (automated resume-track-ine) system," said Bob Hunnerford, staffing manager at a Seagute Technology, Inc. division in Scotts Valley, Calif. "It doesn't keep track of who was interviewed and who was hired like other mated tracking systems, but for

resume retrieval, it's a lot simpler," he "The fact that we can now go in and limit our search based .

on the qualifications for a particular position ... is a big benefit."

- Brie Silveria. **Cypress Semiconductor**

I-Search President John Reese said the service employs a commercialized ver-sion of the text analysis technology used by the U.S. Department of Defense in intelligence operations. It dissects resumes into more than 50 parts, which are then mapped in a standardized way into a

searchable database. That lets recruiters search acc to very detailed requirements. For example, a recruiter looking for industry expertise can quickly target applicants who previously worked at a competing

Searching preprocessed resumes is also a lot faster, said Brie Silveria, who works in corporate staffing at Cypress. Semiconductor Corp. in San Jose, Calif. Previously, Silveria would need to at least "evehall" each of the reuebly too resumes that Cypress received in response to an employment advertisement. But only a handful actually fit the job cri-

teria, she said. Now, Cypress directs applicants to send resumes directly to I-Search, which returns them to Cypress in the form of a

structured relational databa The fact that we can now go in and limit our search based on the qualifications for a particular position and not have to go through hundreds of resumes

by hand is a big benefit," Sifveria said. Jerry Michalski, an analyst at Release to in New York, described the I-Search service as one of the most sophisticated for handling "the big and tedious tasks" of scanning, indexing and translating odreds of resumes at a time. O

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Lucent tool automates IP address changes

By Matt Hambles

WITH THE INTERNET growing, the number of user addresses added or changed per day can pose a management nightmare for Internet service providers and managers of large private networks.

Lucent Technologies, Inc. in Murray Hill. N.J., announced software that eliminates manual input of Internet Protocol ad-

Version 2 of its Scalable Domain

Inc. Solaris systems. A Windows NT version will be available early next year, Lucent officials and

For Planet Access Networks, Inc. in Stanhope, N.J., the software belps reduce Name Server software starts at \$7,500, management costs and eliminates server

made, said Jeff Cartwright, president and director of commo

the regional Internet provider. The alternative would be that every time you'd make a name change, you'd stop and restart the names services server, and that delays things," Cartwright said. With a,000 clients and 50 or more changes per day, the older method would take several minutes, which would be unacceptable, he said.



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Because the software uses a simplifi graphical interface rather than manually intered code, Cartwright has been able to use office assistants to make changes rather than higher-paid and highly trained operators. "It's a major cost insue for us, and because there's not a charge for each change, it's an uncontrollable ex-

pense," Cartwright said.

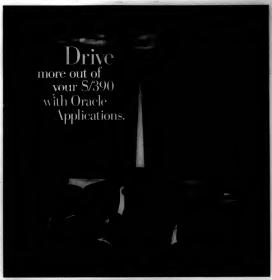
Cartwright said name services "are at the very core" of the functionality of the Internet. A typical change might happen when a company decides to add a new suffix to its existing address or adds workstations to its network. Each workstation typically needs its own unique name to receive Internet messages, inding electronic mail. Lucent is a recent entry in the domain

name management software field, which includes vendors Cisco Systems, Inc. in San Jose, Calif., which bundles it with routers, and Bay Networks, Inc. in Santa Clara. Calif., analysts said.

The market is small and will be about \$50 million next year, but it should grow as the Internet blossoms, said analyst Mike Areliano at Degas Communica ons Group in New Providence, N.I. "It's an early step for Lucent to show that they know how to do networks.

Arellano said. When only a few sites were being added a day, such software wasn't sary. "But it's a different story " he said. O





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Disney site bucks online conventions

Wast Hourwood, Cally.

FORTY YEARS 260. The Walt Disney Co. won the hearts of a meration of Baby Boom chilren with a pioneering children's show on the cutting-edge medium of the day, television. Now, the same company is looking to out Mouselesteer ears

on today's new medium — the On its Disney's Doily Blast

site, the \$18.7 billion giant is iking a couple of the cardinal rules of con-STRATEGIES ner-based on-

namely that consumers won't pay for online entertainment and that companies should develop a simple site that's accessible to the lowest common denominator of computing hardware and software in order

to attract the broadest possible Disney charges a \$4.95-per month subscription fee and re-quires users to have state-of-theart technology to access the site. To view the site, consumers need a Pentium-class or higher PC running Windows 95 and a 28.8K bit/sec. modem. An Apple Computer, Inc. Macintosh

version of the site is due next month, but it will have similar also requires more than aM bytes of multimedia plug-ian to

John Robb, an analyst at Go mez Advisors in Boston, said the strategy is risky. Despite brisk sales in high-end multimedia systems recently, many mers are still accessing the Internet from 486-bas systems and (ZAK bit/sec. moms through online services such as America Online and CompuServe.

going for is relatively small, but they tend to be leading-edge folks — only 3 or 4 millon people, but they tend to be well-equipped. They also tend to have the discretionary income to end. It makes sense," said Richard Wolpert, executive vice president at Disney Online.

market they're

A BLAST POR KIDS

The Daily Blast site is an online service for kids age 12 and under. It offers animated story-books, downloadable sames, educational toys and puzzles. and sports and news written and reported by children.

It provides a mix of the usual ome Disney fare Mickey Donald, Goofy and the

rest - along with content designed to be a little more hip, appealing to kids' love of a goo clean gross-out joke or weird humor. The tone is somewhat

Mod magazine-ish. The site was unched in April. Disney Online also provi several sites for free, including unundimensom - the compa ny's marketine-oriented site a purenting site and sites affiliated with the Disner-owned ABC TV network. Disney also owns a majority interest in Starwave Corp. in Bellevue, Wash., which

sistently ranks in Internet ratings as one of the most popular sites. But it is Daily Slast that is the centerpiece of the Disney Online operation and where Disney is taking the biggest risk

ESPN SportsZone.

The free www.disney.com o

— charging a subscription. The overwhelming majority of sites on the internet are free, and New York - are seeing ur

those that charge subscriptions
— such as The Well Street Journel site from Dow Jones & Co. in tain results. Microsoft Corp. was in the spotlight when it post-poned indefinitely plans to charge online subscriptions for

BECRIPTION SUCCESS Disney believes it can find at cess with the subscription model simply by pouring a lot of ef-fort and high-quality content into the site, changing cont timedia experience. Simil the Journal site — though text-bared, — changes every day, An-other high-profile for-pay site, the Playboy Cyber Club, features multimedia, live chats and content that changes regularly. lim Balderston, an analyst at Zons Research, Inc., said that

most of the sites that do charge for content on the Internet, such as the Journal site, offer busi s-oriented inform ation. "It is unclear whether sites like that, without the mission-critical, got-ta-have-it-for-work component, will be successful in charging.

runs several sites, including

But Jake Winebaum, pres dent of Disney Online, said his company is confident that if it ds sufficient, high-quality nt into the site. Disney will be able to evercome consumers resistance to paying for World Wide Web content.

EKETING POWER And Disney also has its enor mous marketing machine. The company advertises extensively and offers a one-month free trial, Wineboum said. And subscriptions aren't the only source of revenue from Duily Blast. The puny also sells advertisements and plans to offer the site jor online services and Internet service providers. Meanwhile, Microsoft offers free access to Daily Blast for users of The Microsoft Network, a privilege for which Microsoft pays Disney.

Disney wouldn't comment or ow much of its Daily Blast rev enue comes from consubscriptions and how much comes from other sources, but it said the consumer subscription evenue is significant

Disney charges for the site be-cause it believes common wisdom is wrong. It said consum-ers will be willing to pay for a site if it offers a lot of high-quality, original, fast-changing content and is very erent from other Web sites - and if the company running the site uses marketing to over-

Analysts question plan to link data marts

By Kim S. Nach

INFORMATICA CORP. BEST week plans to announce a scheme to link dispersed data marts through the use of addi-tional databases and tools. Analysts said the idea it land able, but may require too much forethought and rigorous information systems oversight to really take hold.

The proliferation of lone mart islands has been a problem for users who want to query data from more than one departmen or do a companywide analysis. Informatica's theory is that if

ssers build marts to a detailed set of Informatica-invented merifications, those marts will be able to communicate with one another and with a larger a set of databases and tools due by year's end, may be wishful thinking, some observers said.

"It's a worthy goal, but may not be feasible," said Henry Morris, an analyst at International Data Corp. in Framingham, Mass. One reason is that IS manag ers "can't completely control marts" to make sure they are built uniformly, Morris said. Users can create them with

out IS help, and many financial applications, such as those from PeopleSoft, Inc., come with ir own pseudomarts already built in, Morris said. Under Informatica's Enter-

prise Data Mart plan, users rould build marts with cooperation in mind from the start. The marts would use the same data itions and formuts for neta data, which is technical ination about how and where A database, called a Dynamic

Data Store, would hold common information extracted from all existing marts. Users could then query that catch all database. Another database, called a Global Data Mart Repository. would manage the meta data to make sure queries were routed to the right morts, no matter which department the inquiring

But the plan won't work with non-Informatica data marts without at least some reworking of the nonconforming databases, said Diaz Nesamoney, Informatica president and chief technology officer.

Prices haven't vet been set. C Data quality is ferome



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Mainframer after all these years

frome world and founder of Amdahl Corp. and several other companies. Amdahl. 74. has a new company - Commercial Data Servers, Inc. — and a new mainframe, the CDS-2000 ICW. June 91. He also is readying a high-end mainframe system with special cooling technology that could tackle the market leaders

(see story, page 12). Amdahl sat down with Computerworld Senior Editor Tim Ouellette during last week's Share Technicel Conference in Atlanta to telle about his plans and the future of the mainframe market.

AMDAHL: I have never really been out of it. But in the earl 1990s, there was so little interest in the mainframe market that it was hard to raise new funding. CW: Do you think the market in

still strong eno ill strong enough? AMDAHL: When you try to

determine how much of the mainframe market got displaced by distributed systems, it was only about a% displacement. The over \$1 trillion in legacy software out there would have cost more than that just to

convert to another platform. CW: How do you think today's mainframes stack up against dis-tributed platforms? AMDAHL: The mainframe is

cheaper overall than most after natives, and with the CDS-2000, we are cheaper than most mainframes. I am amazed at the number of things reinvented in the computer industry on other atforms. People often have no dea what was done before on the mainframe - and oftentimes they are decades behind technology already put on the

CW: How did you develop the CDS-2000? AMDAHL: It did not start as

an actual product, but as a test bed for our I/O structure we have developed. But then we recognized that it made a mean duct for the year 2000. There are some 10,000 olde

IBM machines ose operatsystem won't be upgraded for the vest 2000, and users need a simple Jestic

The mainfran than most bed for their changes

CW: Does the fact that A Corp. is being bought by Pujits: Ltd. affect the sales and service feel you have with it to suo the CD5-20002

AMDAHL: No, it doesn't affect our agreement. It actually might be somewhat helpful, since Fu jitsu may service some locat worldwide that Amdahl does not have access to right now

CW: Are you sad to see your old company lose its independence? AMDAHL: I came to terms with my feelings about Amdahi Corp. back in 1070 (when be broke all ties with the comm For me it was the loss of my

CW: Where do you see the 5/100 market in the future?

AMDAHL: There will certainly be some applications you may want to off-load off of larger mainframe systems. But in

these cases, since mainframes are getting cheaper, a smaller mainframe like the CDS-2000 could be used to run Lotus [Development Corp.'s] Domin or some other isolated appli-

Digital/Intel brouhaha gets chippy

▶ Battery of countersuits may hasten settlement

By Jalkumer Vijeyan

INTEL CORP.'s countersuit ast Digital Equipment Corp. on 14 counts of patent infringe-

ment, filed last week, sharply escalates the chip war between the two companies But it is unlikely that the move will have any immediate impact on Digital's ability to

me selling systems based on Intel chips And some observers said Intel's counterpait only in-creases the chance of a negotiat-

ed settlement between the two "Proving patent cases of this

nature in court [is] a nightmare because you have a lot of fairly arcane technology" that is often beyond the comprehension of lurors who decide on such cases, said Dean McCarron, an analyst at Mercury Research. Inc. in Scottsdale, Ariz. As a result, companies that have been sued over patent in-

fringement sometimes rely on countersuits to bring the other party to the preptiating table. McCarmn said

Advanced Micro Devices, Inc. and Intel, for instance, arrived at such a settlement after a similar

Digital fired the first salvo when it sued Intel for copying up to so of its patented technol ogies in processors such as the Pentium and Pentium Pro. Intel returned fire last week when it

claimed that Digital did likewise with 14 patents relating to microprocessor architecture and Whatever the outcome, the legal posturing of the two com-

panies is likely to be a costly pre occupation for Digital at a time when the company can least af-The Maynard, Mass-based

ompany is battling several fires in its effort to turn around its sputtering business. Only last CHIP WAR

CHRONOLOGY

week, Digital sold its unproable \$100 million printer business to Genicom Corp. in Chan tilly, Va., for an undisclosed sum. The sale came on the heels of reports that Digital is also planning to sell its fading

The moves are in keeping with Digital's recent efforts to divest itself of what it considers to be costly and none businesses (see chart)

Such sales have made Digital a more focused and leaner com-

pany, but they also mean that the company now has to rely on a much smaller stable of prod-ucts and services, said Terry Shannon, editor of "Shannon Knows DEC," a newsletter published in Ashland, Mass.

Digital closed its 1997 fiscal year with revenue of just over \$13 billion - a decline of \$1.6 billion compared with 1996 The company claims the decline resulted from falling Alpha server revenue, fluctuating currency rates and sluggish business

> Digital has said it will focus strategically on the Internet, Alpha servers, 64-bit technology, Windows NT, Unix and OpenVMS at the highest end.

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that matters The quiet heroics of Guam government webmaster Gregory Okada went

mostly unnoticed in the terrible wale of the Korean Air Lines disease. Here was on ordinary IS gry, a technical support specialist whose job probably never attracted the attention of the extende world.

But Okada welve up the morning after the creath and realized he could directly help with the organt need for information from his remote infend. He and a fifend at the nearby university where the Web server was leased turned the swengement with this is not con-



stantly updated resource for everyone from distraught family members to the news media worldwide ["Guarn tragedy spores Web aid," CW, Aug. 11].

Like term of thousands of IS professionals do every

day, Olends name his sechnology expertises like a leader — someone who understands the power of the right tool need for his present impact. But in a larger some, the actions likewise the profound changes the interese and the Web have had on our lives. In the titry apacs of a few years, the 'not has become the most becomely available interpresent communications tool in latters.

As one Rad Cross official in Guarn put it, "What makes the 'Web really handy is that distance tends no to be a factor — you're able to access that information if it was next door."

When once people would have gethered around a Virsa to experience historic overta such as the MASA mission to lates, today they turn to their Web browser and lag on MASA expects as many as a billion libs at the Fulfithed will by the time the mission cods. A few months ago, the FM reported the first arrest of a mispact on its "The bitest Wested Registers" list because of a description posted on the laterat.

These days, when all that our industry seems to talk about is the money-making potential of the Web, the dedication of that webmaster in Goam was a wonderful reminder of what really matters.

Maryfren Johnson, Executive aditor



Readers debate Microsoft's declaration of war on Sun's Java strategy

THE STORY "Microsoft declares
war" [CW, July 25] makes it
clear that Microsoft doesn't care
whether Java is cross-platform.
Why should it want to support Apple. Sun, SGI and others?
For years, all the trade journals

ple, Sun, SGI and others? that he For years, all the trade journals assert have been saying that Borland produces superior language compilers and development tools. In spite of this, purchase

development tools. In spite of this, purchasing managers made the safe decision and bought Microsoft.

We are looking at the end 'of any competitive and the fault is all our own our

and the fault is an our own: our managers, our CEOs and their shortsighted vision. Douglas K. Akiguist San Jose, Calif.

JEC doesn't

Let's be clear on that."
Maritz apparently forgot that he
lives in a glass house. Microsoft's
yet-to-be-released Internet Exploret 4.0 and the next release of livindown op suffer from similar blur.
Indeed, it's difficult to determine
where the internet Explorer 4.0
beta release stops and the upgrade
to Windows 95 begins.

Jim Kimble Seretoga, Calif

the book't Exow where Microsoft it trains people to stick to the party line so completely (and I thought a Maritz did a really good job), but it peems clear from his comments that he couldn't disagree with your it suscetions.

Andy Turk
Serrus Software, Inc.
Burlingsme, Calif.

Surlingsme, Calif.

As a java programforced to make choices
and will have to do

forced to make choices and will have to do more work because Microsoft refuses to ship Java Foundation Classes (JFC) on Internet Explorer or Windows. Marita target us to separate the language from its libraries, but any CPC++ programmer can tell you that those

languages have their own ANSIblessed libraris. Why careful size and Marize describes [FC as a compening operating system. This seriously mischancteries [FC, which only changes Java's GUI. Specilicial), [FC consists of one GUI comtrols and a new drawing AFI. The proces of [raw that Microsoft already supports, such as multitasking and network connectivity, have more to do with operating system functionality than IFC do.

transcroaming that Maritz referred to [FC as heavyweight. The new JFC GUI components for Java La are lightweight components or Java La are lightweight components or Java La are lightweight components one of the native data structures or peer classes that the Java La GUI requires. Microsoff exiting about JFC just doesn't ring true.

Charles For

Programmer/analyst Oklahoma City

Licosovr cuarse that the VIFCs aren't inferior or technically unsound — only that Microsoft refuses to put another opening system and bloot on its Windows platform. In what was the IFCs bloasted They score that the think the property of the control of classes will likely be less than one-fourth the size of an anone-fourth the size of an MFCg.All file, of which most of MFCg.All file, of which most

us have many).

Putting classes on a system doesn't make it run slower. The only possible fear is that putting the JFCs on Windows will encourage people to use them, which is

the JPCs on Windows will encourage people to use them, which is purely a competitive issue. The JPCs will simply be the way that GUI applications are done in the not-too-distant future.

stant future. Tim Triemsti

Lovan Masitz's quote about not shipping "another bloated operating system." You'd think they'd be pretty good at it by now.

Dylan Tynen President /dev/null Internet Containing Austin, Texas

comments from its readers. Letters shouldn't exceed soo words and should be addressed to Maryfam Johnson, Executive Editor, Computerworld, PD Ses 1971, 300 Cel. Connecticut Path, Framinghem, Mass. 07701. Fax number: (500) 879-8891; Internett: letters@ow.com. Please include an address and phone number for verification. AUGUST 18, 1997 • VOLUME 3, ISSUE 8

COMPUTERWORLD

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Shopping Smart



A Better Way to Buy IT through IS/Line Cooperation

TWO HEADS, ONE PURSE: Now that IS shares IT purchasing power with line management, the old methods of buying software won't cut it. Meta Group's Dale Kutnick provides a way for users and IS to work together to get the right system at the best price.

The IT leaders of a large distributor of pharmaceuticals are about to enter a lengthy, intense and costly search for an enterprise resource planning (ERP) software vendor.

The company wants this ERP system to support an Internet-based application encompassing Internet ordering, purchase order and invoice management, customer billing and product inquiries, and a laundry list of other functions and options.

Sound like a mission for IS? Not quite. The company wants the purchasing process to be true to the organization's business objectives, budget and time frame. To ensure that happens, it has put together a search team of line and IS managers to determine how the company's IT dollars will be spent.

What's happening here reflects a new reality: The power of the IT purse is passing from the IS organization to the business side, to line management. When IT decentralization, brought about by distributions

uted computing and new Internet-based linitiatives, is osupled with the trend toward "lean and mean," IT budgets get puthed further down into line organizations. As profit-and-loss responsibility moves down the hierarchy, business people are taking a full-time role in IT-related planning and implementation.

There's another reason: IS's track record. IS organizations have a history of promising "better, faster and cheaper" without quantifying deliverables, business value or costs. More than 40% of IT projects do not meet business needs and

The power shift between IS and line managers requires

a change in how purchasing is done



It's no wonder Meta Group, Inc.'s research indicates that more than 55% of result in other disasters. You can ouess who will probably be current IT spending is controlled by line organizations, with that number expected to jump to 80% by 1999. Line organizations and their managers now have far more control over IT spending and projects then they have ever had

before. However, these newly empowered line managers are often poorly equipped for making software decisions. If not properly managed, this realignment of purchasing roles and responsibilities can lead to software purchases and systems development efforts that fail to meet business objecrives, come in over budget or

held responsible when that This new world needs a different approach to IT management. In particular, this power shift between IS and line management requires a change in how purchasing is done. Soft-

ware purchasing is not the only area where this realignment is

being played out, but it's an important one. Purchasing ioitiatives are

ority and establish future roles and responsibilities. When is comes to the issue of IT-business alignment, it's one place where the rubber meets the

The new power structure means traditional purchasing mechanisms such as request for proposals (RFP) need to be rethought. New devices must be invented. And IS leaders need to re-define their role in pur-



IS has m take responsibility for making the new IT spending power structure work.

First and foremost, IS manarers must understand bow best to work with their line manager counterparts who may have the purse" but probably not the skills to determine system requirements, technology options and their cost, and what it takes to successfully negotiate with and manage vendors.

In this new situation, the primary tole of the IS organization is to be a purchase advisor and information enabler. This job is much more influential than it initially may sound. By guiding business units through the overall selection process, helping them to identify and articulate their objectives and resents and matching those irements m technical speci-

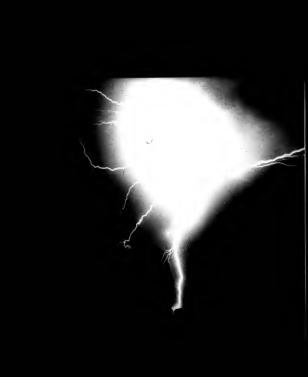
fications, IS can have considerable influence over final decisions, while making itself an invaluable, trusted business partner. Besides exposing poetial problems. IS can also do the technical evaluations of products - a key part of the Arcision-making process.

Io this role, IS management provides the "knowbow" to build and/or acquire systems that business units then use to create and mainrain information which they "own" and for which they are responsible. IS also has critical experience to negotiating license agreements and service contracts and managing outsourcing relationships.

Line managers have two

roles: First, to explain how the business processes that underlie the technology work. For exam ple, when customers call reuesting proof of delivery on a shipment they claim to have never received, what documents must be tracked? What informerion delivered? What doos ments generated? Who is responsible for updating

The line manager's other role: to take responsibility for the information which it creates. In the past, IS has tried to control every aspect of the information - sort of "mothering" projects. That's over: Today's successful relationship require IS to relinquish some of







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Question: What do you get from a successful purchasing process? Answer: More than just the right product. A truly win-win selections, enhances the role of the IS organization. puts vendors under close scrutiaccurately identifies true ownership costs.

Such a process requires that IS and their line management

counterparts work together to develop: · A short, simple RFP to obtain initial vendor information.

Written by IS specialists, this document describes the objectives, budget and requirements defined by the business unit. successful process also yields . Detailed work scenarios that define specific functions to be demonstrated by the "shortlist" vendors' products.

ny, gets the best price point and . A set of product demonstration requirements for the finalists, based on the functional requirements in the work scenario.

> 1. THE RFP I don't have kind words for the typical RFP. Yes, RFPs, if done

correctly, have a proper role: They can help the IS/line onganization team during the first phase of the search and reduce the initial set of vendors to a short list of two candidates

But the RFPs I have in mind are short documents. They set out the business objectives and functional requirements defined by the business unit, and the basic technical requirements identified by 4S. They're nothing like the huge, bureaucratic documents we've all grown to hate.

In a world where IS and line managers do the shopping together, traditional RFPs are a waste of time (notwithstanding the legal requirement for government agencies and regulated industries).

The traditional RFP, as written by the IS organization. is a detailed description of uses requirements, containing a bone-wearying listing of the splete features and functions of the sought-after solution. Each vendor is scored by the features and functions it offers: each feature is weighted differently depending on its relative importance. The weighing reflected the IS organization's interest in technological pyrotechnics more than business

Vendors and selection committees have gotten very good at getting past this dull drill.

Most vendoes have tied an expert system to the word processing software they use to write the documents, so they can quickly generate an astr ishing number of "yes" res es to RFP questions. Sel committees use less high-sech ods: If they don't like the ome, they simply adjust the



is generally decided subjectively. Traditional RFPs have other flaws. They do not help evaluators assess the vendot's vertical market expertise; nor do they help identify interoperability and customization needs as well

as other issues. That kind of RFP must go.
The new RFP, developed by an IS/line forganization purchasing partnership, should ask vendors to focus on issues that count in the real world: key functional and technical requirements.

cost of ownership, time-to-benchit and return on investment.

To get useful information from vendors, this condensed RFP should provide some background information about the purchaining organization and its

requirements, such as:

The areas of the organization that are targets for automation.

The business processes slated

 The business processes stated for new automation (and how they cross lines of business and geography).
 The organization's mandatory

requirements (e.g., system musr run on rhe IBM AS/400 platform, be able to support Web-based procurement, integrate with certain databases and run certain re-

ports daily). The RFP should also ask for these responses:

 How the vendor — and its partners — will meet the outlined information requirements.

 A description of the technical capability of the product, including its potential uses.
 A discussion of how the product can meet integration needs and reporting requirements.

A SAMPLE SCENARIO

What does a work accessrio look tike? Here's a sup-by-sup accessio for overriding an incorrect price on an order, based on an access company that was choosing an ERP settware

vendor:

A customer has placed an order for 35 cases of an allergy
medication at \$345 per case, the price normally paid. When
the order is entered, however, the database reflects a price of
\$320 per case.

DEMONSTRATE

1. The ability of the user to access price information that

includes list, cost and discounted.

2. How the user would access the last price paid by the

customer for the product.
3. Change the customer price to \$320.

Show how the system would provide product supplier information such as product code, product description, warmany information and supplier phone, for and E-mail information.
 The ability of the system to download product information into other applications.

tion into other applications.

6. The ability to access supplier Web sites to obtain additional information.

References from other customers.

 A description of the vendor's vertical industry expertise.
 Identify the vendor's relevant business partners.
 IS and line managers should review RFP responses together,

review RFP responses together, selecting the top two or three vendors who most closely meet overall requirements. RFPs should never be the primary wehicle for making a final selection. That is the job of the work scenario.

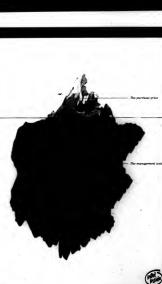
2. WORK SCENAMOS Once the 20-odd initial vendors

get whittled down hy the IT/line search team to two or three candidates, it is time to develop a set of work scenarios. This step is the heart of the software selection process, the

point at which good teamwork between IS and line organizations is most critical to the overall success of the purchasing effort.

A work scenario simply sees our a vicuation that the vendor's offware must handle, such as adjusting a price on a purchase order, or handling a customer inquiry (see box above). Work scenarios should be created for as many current and potential business processes set be business until requirement dictate. Each is a short document—generally no more than one page—but a powerful one.

These acenarios force vendors to focus on a client's issues as well as the product's as strengths. The decision team can see exactly what can be acomplished within a product's





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d giltter of typiand toward how

products work.

standard capabilities, and what will have to be customized, by using the work scenario as the framework for the product demonstration and ensuing dis-

cussion. If line management belps to develop these precise work flows. IS staff has the detailed understanding of the business processes it needs to get complete answers, both from a business and a technology perspective.

Work scenarios can also help determine the actual value of a software package to the business organization. Application packages ofteo contain much more functionality than users really need. Line management can use scenarios to de-

cal, optional and unnecessary - helping the business organization determine what it is will-

ing m nav. It takes time to create a work scenario. The IS/line team should spend two to three days actually watching the business unit do its work before it writes one. That's more time than is spent on the rypical information interviews.

but it's much more effective in determining shortcomings of the current system, identifying opportunities for redesigning busioess processes and spotting "pain points" - what causes extra work, where duplicate effort is expended, how often procedures are per-

oess processes are the critical drivers of work scenarios.

There are other benefits of this approach: Work scenarios should uncover critical, but uparticulated, requirements. This process helps better define true cost of ownership since mainteozoce, customization

and enhancements are all identified up front. All this, of course, puts

the user in a good oegotiatiog

After the work flow scenarios are written, it's time for the "short-listed" veodors to preseot product demonstrations cide which functions are criti- formed. Work flow and busi- based on these work flow scripts. If the work flow scripts are done correctly, vendors will be forced out of their comfort zone - feature-byfeature comparisons - and obliged to operate on the users' terms. The script draws attention away from the flash and glitter of typical presentations and requires attention to how products work in every-

day situations. One way to manage these demonstrations is to ask the vendor finalists to set up a mini-pilot in a conference morn. One week should be allotted (per vendor) for this offers one other benefit: It

nds-on testing of the system. During this process, pay particular attention to any point in the demonstration

that doesn't seem to match the work flow script. That's a potential point for customization. Force the vendor to respond in detail as to how the customization will occur. Probing this area is one way IS can bring immense value to the process. Knowing the specifics will help all understand potential implementation delays and incre-

mental costs. The demonstration phase

gives IS an opportunity to assess the skill levels of those using the software and find out what they like and dislike about the software they're



RFPs, work scenarios, demonstrations - there are clear and consistent benefits to having the IS/line team work together, using these techniques, to man-

age the purchasing effort: · This process makes users more confident that IS truly understands their issues and

requirements. The process also enhances IS's credibility, because it gives IS an opportunity to demonstrate its technology expertise within the context of the de-

fined business objectives. · Vendoes are forced to add how the product fits the needs of the potential purchaser. · All parties have a better understanding of the risks, trade-

offs, delays and incremental costs related to any decision. The process provides the input needed for contract neentiations for customization

Organizations that work to gether in this way will find emselves in a win-win situa tion. IS will be viewed as an ally, not as an adversary, and IS professionals will walk away with increased business knowledge. Business unit managers will have a better appreciation of their IS colleagues and their technical expertise and advice. Last but not least, this new IT/line teamwork will better

support the needs and objectives of the entire organization. Not a bad scenario, is it?



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Give us a wake-up call, already Michael Cohn

S is getting boring. These days, there's nothing new. The Internet is old hat. Year 2000 is vesterday's news. DVD and WebTV are vawners.

What we need is some excitement. Some controversy. Some healthy high-tech hype, just like the old days, Remember when folks stood in line all night for Windows

95? Or when IBM gobbled up Lotus? Or when we were overloved just to get an

AOL disk in the mail, and not just bee they threw in 100 free hours and an Easter ham? IS needs some big We need something to wake

things such as: Maybe Larry Ellison or Lou Gerstner could shell out for something. And not just for some sysplex peddler, cable company or a measly football team. Boring! What if some high-tech player took over an airline? An oil company? A burger What we need is some excitement. Some controversy. Some healthy high-tech rype, just like the old days.

tend to become the No. 1 provider of extranets, E-mail and electro commerce! ... And if that fails,

would you settle for a Filet O' Fish?" A Major Outage. Nothing spices up IS like a little cata trophe. Let's not get anyone hurt, but what if some Midwestern state's main frame thought 1997 was 1897 and shut down for a quarter or two? Surely that

ould get people's attention, unless you oppened to be waiting in line for a drivcense at the time and probably nev er even noticed the difference.

=A Killer Lewroit. Somebody sue somebody! It worked for the tobacco companies — look at all the press they got. Is Joe Carnel more es-citing than Bill Gates? I think not.

"So. Ms. McGillicutty, you blame your husband's unfortunate illness on Excel?" "Yes, Your Honor.

He was up to three macros a day, and it dam near killed him. I'm asking \$2 million and that they wipe tho Gates fellow's mug off boards and magazines — he's encourag

Please. No more news about Java. Or

300-MHz chips. Or tiny palmtop operat-ing systems. We need something fresh. theer excitement of CASE? The nearfrenzy created by DBa? The way your heart pounded when you first thought Maybe not. Actually, my heart still pounds when I think about objects. But that's because, so far, we've forked over \$600,000 to eight contractors from Lord knows where who still don't plan to roll

The only way we seem to make hear nes these days is when we screw up. Pentium flaws: big news. Security buy in Netscape: Stop the presses. So let's hope someone discovers some esoteric or, such as MMX processors skip every other B-flat. Or that 96K mode are really only 55.7K. If we could just reveil that some Pentium IIs occasional lose \$a.800 during random subtraction operations, that might get some attention and nossibly save my backside from the up of trouble I got into with the IRS

If all else fails, maybe we could urge a pair of longtime rivals — you know, two vears - to kins and make up. Imagine the coverage if we could get Bill Gates and Steve Jobs in the same room. Naw, it'll never happen. I'll settle for Tyson and Holyfield and just try to win back my ao

Coke is a meagerly paid consultant in Atlanta and squally is pretty boring, too

chain? Now that's news. "As part of our Survey this!

Brett Arquette

'm hiding in my office. I've locked the door and told the help desk to screen all calls.

If it's someone doing a survey, the official answer is,

"I don't do that anymore." Why? As 33.5% of you already know, if you filled out every survey that hit your desk or came in over the telephone, it would take about 20.06

hours per week. If information is money, that would explain why 97.2% of everyone in the com suter business wants more of it - at my

On average, I must receive at least three requests per week to take a phone survey, and 50% more paper surveys. I've soticed over the past few years that the surveys themselves have gotten 38.2%

At the beginning of the last phone survey I took, I was assured it would take only five minutes. After 20 minutes. I became really agitated and kept telling the sensitivity-challenged person on the oth-er end that I was done. He kept assuring me that there were only a few questions

left - which turned into a few more and a few more. I don't think there was an end to the questions; his job was to keep me on the phone until I hung up in

Since that time, I accept 100% fewer bone surveys and do 98% fewer mail surveys. But I can't walk away compi For some bizarre reason, I find I'm

a7.3% more prone to do mail surveys if the surveyors simply insert a dollar. Don't ask me why. It's not as if a single simoleon is going to pay for the time

it takes to fill out eight or 10 pages of questions. It's more a feeling that the people on the other end have acknowledged in a simple way that my time is worth som

In fact, I could see myself becoming a full-fledged survey-filling-out junkie if they put in \$50 instead of \$1. I have no peide. Well, 22.0% less than last year, So I have a few questions for all you

rvey companies that call me while my mail server is on fire. Don't worry, it'll take only five minutes. In fact, I'll supply

Q: Do surveys matter to me? A: Not really.

because 62.5% of everyone else uses some hardware

If you filled out every survey that hit your desk, it would take 20.06 hours per week.

it will be in my price range. Q: How many companies want me to fill out a survey?

A: 400% more than five years ago. Q: What happens to all the answers I give, and what mailing list do I end up

A: You put me on a % more mailing lists for every answer I fill in Q: How many corporate and government IS hours are wasted per year filling out

A: c% of the GNP Q: Why don't you just survey the compa nies that sell this stuff?

A: They already know how many boses they sell and to whom.

I'm sure that surveys are important to someone for some reason. Therefore, I'm going to post a single survey response on my organization's home page When someone calls, I'll direct them there, and they can get the informa on their own time.

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Arquete is manager of information systems at the 9th Judicial Circuit Court in Orlando, Fla. His 8-mail address is barq@

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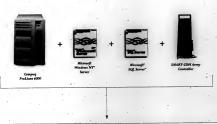
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Corporate Strategies

Case Studies + Trends + Outsourcles

1997 TOP 10 INVESTMENT

Briefs Corporate strategist: Scott Barrett

By Thomas Hoffman MOST CHISF INFORMATION officers have to slog through only one or two major acquisitions in their careers

Not so for Scott Barrett. He is responsible for orchestrating systems integration among the wide that Republic Industries, Inc. acquired during the past year, and that doesn't include the company's expansion into the car-rental, waste management and security businesses Barrett, 36, thought he had witnessed "explosive" growth at Blockbuster Entertainment Group when the video retail nt was adding a new store every 16 hours to its 4.000ore franchise during the height of his eight-year ten as CIO and later as operations chief at the Fort Lauderdal Fla.-based company.

Compared with Republic also based in Fort Lauderdale Blockbuster's growth "was mildnnered," said Barrett, a rather mild-mannered fellhimself who enjoys woodwork ing and fly-fishing when be isn't guiding one of Republic's mesadeals. "I like to build ngs," said the CIO, who is married and has a 9-year-old son. "It allows you to focus on the task at hand." He will need that focus at

Republic, where he is centralizing manag-ment of the company's telecommunions and ations areas. Barrett is also examining a



Paying for Office politics at Office Depot year 2000 repairs

Vendors could be

held responsible By laikumar Viiavon

READ THE PINE PRINT. It could save you some money in year 2000 conversion work That's the advice experts have for corporations that have out-

arcing agreements with vendoes that go back a few years. In some instances, at least experts said, outsourcing and other third-party vendors could be required to undertake year 2000-compliance work - and fix it at their own cost - as purt of the services they agreed to do

Getting vendors to agree to and actually shoulder all the year 2000 regair costs could prove formidable, but companies should at least request in writing that their outsourcing vendors do so, observers said. Although such cases haven't reached the courts yet, conflicts over who is liable in year 2000 onversion work - user com-

By Julia King nologies that could reduce the cost of training employees in California and Texas and at

successfully implementing new technology at a big compa ny takes time and money, of course. But it also requires a good deal of political will. Just ask Michelle Sonder, a raining technology developer at Office Depot, Inc., the office supply retail chain.
In 1995, Sonder- and her

company headquarters in Del-ray Beach, Fla. Office Depot was spending thousands of dollars per week flying staffers

around to train workers on its proprietary order-entry system. It was spending even more money training workers in packaged business applica team began researching techtions such as Microsoft Office



Paying, page 38 training system imp

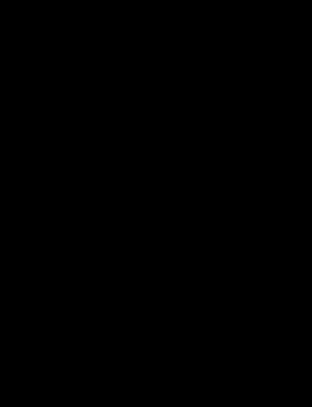
First the team tried CD-RON based courseware, but "it failed miserably," Sonder said, because users were accust classroom learning. That prefer-ence also spelled doom for a brief look at satellite broadca In October 1995, Sonder's team signed a contract for an

interactive "virtual classes system from Troy, N.Y.-based Interactive Learning Interna tional Corp.

The LearnLinc system, which corporates videoconferencing multicasting technology. would operate over the company's wide-area network. That would enable users in remote locations to watch an instructor online via video while practicing at their individual desktops.

But the information system department balked. "We were told we needed to create our own network to connect to the different locations," Sonder said The reason: The existing net work access lines to the remot sites were only 56K bit/sec., but the new training system required crak bit/sec. lines, said Joe Brink, director of network

services at Office Depot. On the political front, Sonder said, IS also didn't take kindly to the training department hir ing its own network techn



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Briefs

hat projects returned a positi

return on investment for IT? Server consolidation 67% Network integration 62%

Mainframe 58% consolidation Legacy system 56%

Bipolar-to-CMOS 53% management tooks 4896 Re-engineering

Network management tools Data warehouse

Base: 500 serior IS managers and

YZK services surge for year 2000 ser

R wins contracts

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Corporate strategist: Scott Barrett

By Thomas Hoffman MOST CHILL INTORNATION Officers have to slog through only one or two major acquisitions

Not so for Scott Bagrett. He is responsible for orchestrating systems integration among the 127 new-car dealerships nationwide that Republic Industries Inc acquired during the past year, and that doesn't include the company's expansion into the car-rental, waste management and security businesses Barrett, 16, thought he had at Blockboster Entertainment Group when the video retail grant was adding a new store evers 16 hours to its 4.000store franchise during the height of his eight-year tenure as CIO and later as operations chief at the Fort Lauderdale. Fla. based company

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Paying for Office politics at Office Depot

year 2000 repairs

 Vendors could be held responsible

By Janksomar Vijayan

READ THE FINE PRINT. It could save you some money in year 2000 conversion work That's the advice experts have for cornerations that have outsourcing agreements with vendoes that go back a few years. In some instances, at least experts said, outsourcing and other third-party vendors could be required to undertake year 2000-compliance work - and fix it at their own cost - as part

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implementing AUCCESSFULEY new technology at a big company takes time and money, of course. But it also requires a good deal of political will. Just ask Michelle Sonder, a training technology developer at Office Depot, Inc., the office supply retail chain.

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its proprietary order-entry system. It was spending even more money training workers in packaged business applications such as Microsoft Office



Office Depot's Michelle Sonder says it was a battle to get a Paying, page 38 training system implemented companywide

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Office politics, page 30

Paying for year 2000 repairs

s or contracted service viders - are expected to

od as 2000 draws closer, obvers said. Dan Munumery, a partner at lew York law firm Milibank, Tweed, Hadley & McClox, said user communies must do advance work to protect their in-

Not doing the legal groundwork is a potential hazard. Cor-porations could risk waiving er rights later to seek reimbursement for money spent fix-ing a year 2000 problem, said jeff Jinnett, a lawyer at LeBouef, Lamb. Greene & Mackae in

New York. creasingly important for com-panies concerned about the sts of year 2000 conversions and their exposure to potential

'It is a very gray area; nobody has ever litigated over this so

far. But if the client has a strong case, they will be able to at least rtly 'off-lay' the costs" involved in the conversion. Jinnett

That's because in some cases year 2000 conversion work could fall under the provisions contained in a standard main nance contract, observers said.

MALLER IS BETTER

Under a software maintenance contract, a vendor typically agrees to handle preventive and corrective support of all softto systems and third-party soft ware under maintenance, Year 2000 conversion could fall under that category, depending on the pricing of the contract and the language of the agree-ment negotiated between the vendor and outsourcing com-

ing the conversion), the more

pasty, some observers said The smaller the cost (of do

likely it is that you can force the vendor to do the job themselves" rather than pursue litiga-tion, linnett said, "But if the cost is really large, they may just end up saying. This doesn't make

any sense for us." Most newer contracts, such as the one Trigon Blue Cross/ Rive Shield in Richmond, Va., has with its outsourcing vendor, clearly define areas of responsi-

bility for year 2000 work Trigon bears the bulk of the responsibility (for year 2000 work], since we are building the baseline test beds' against which all the applications will be tested for year 2000 compliance, said Dan Clark, director of applications services at

Trigon.
Though the actual renova-New York-based system integrator Cap Gemini America, Tripon is responsible for crurial tasks such as identifying all YEAR 2000 TIPS FROM THE EXPERTS

§ Locate and review Scenes and long maintenance agreements that mind

view all date precessing outstarting a determine if the outstarting vando

I Examine any provisions in the systems softwa

nce part of an ou

the affected date fields. But older outsourcing co tracts signed before the year

2000 bug gained public atten-tion seldom made those kinds of provisions for handling year 2000 work. As a result, assign ing responsibility to a vendor rould be hard to prove. "Obviously, legal issues are

something that people resort to when everything fails. But I am not so naive not to believe that sometimes that may be the only way" to resolve disputes that arise out of the year 2000 issue. said Chad Willis, a senior ana

has at the Salt Biner Deniert and president of the Arizona Milleium Group in Phoenix. "It is a fairly tough neg

tion because each one of these contracts will also have limits tions on (a vendor'a) liabili Mummery said. "A lot depends on what other work you are able to bundle on top of what you already have with the vendor, as a hook for doing the job," said m



Corporate strategist

in which the IS group may team with corporate departments such as payroll and claims processing to deliver services to business units.

Under its acquisitive-minded CEO, H. Wayne Huizenga, Re-mablic has skyrocketed from a roo million also-ran to a \$10 ion juggernaut in less than two years. In addition to its noNation used-car franchise, Republic's holdings include Na-tional Car Rental System, Inc., Alamo Rent A Car. Inc., and Spirit Rent-A-Car.

Enter Barrett, a longtime lieutenant under Huizenga who took the reins of Republic's chnology department just two onths 200. While he has been iging himself up to speed in Republic's four primary businesses, Barrett has been plotting an information techno strategy to help Republic cut costs and improve the way its spanies do busi

For example, because most of Republic's smaller dealer-ships have low telecommunications expenditures, they usually pay top dollar for local and longistance services, Barrett said. By centralizing Republic's ecommunications support os national carriers tone

serving as a backup carrie Barrett said he hopes to slash the company's tel tions expenses in half. A back up "provides a challenging envient" for a lead vendor to "look over its shoulder at fcom tivel rates and new technolo mes," he said

Integrating Republic's new-car dealerships might not be as complicated, as it looks. Most rely on dealership systems

from two primary vendors — The Reynolds & Reynolds Co. in Dayton, Ohio, and Automat ic Data Processing in Rose land, N.J., which is typical of the automobile dealership industre

O A BAR There is a "large barrier for en-

try' into this market, Rarrett said, because the systems used by car dealers have to be approved by and integrated with the world's 30 largest automobile manufacturers. So Barrett is evaluating the strengths of each company and intends to select a single partner by the end of the year to improve IT

support to the dealerships and simplify contract management. public would face even greater challenges if it decided not to integrate its far-flung dealerships, one industry analyst said. "Companies that integrate see themselves more pany better than those who do not," said Christine Ferrusa Ross, an analyst at Dataquest

Worldwide Services Group in Westboro, Mass. Although she views Barrett's role as a "tremendous" challenge given Republic's size. Fer-

rusi Ross said Barrett can use integration to his advantage by applying the best practices of each dealership and standardizing those processes *across the

In the long term, Barrett said. he is eyeing the potential that electronic commerce can deliv er to Republic's dealerships and car rental agencies. With the exception of Alamo's World Wide Web site, which has online ations (www.gooleme.com) most of the company's sites

Barrett said he would like to formulate an electroniccommerce strategy that allows car buyers to use the Internet to shop for a car, make comparisons, purchase a vehicle and

have it delivered.

"I think it's going to be a buge opportunity for us to step into that arena," said Barrett, who figures it will take consumers a year or two to abandon the need to "touch" a car before signing on the digital dotted line. [3

Office politics

CONTINUED FROM PAGE 37 even though IS had already said it couldn't support the system. A third problem was that LearnLinc runs on Windows 95, and Office Depot's corporate standard is Microsoft Corp.'s

Workgroup for Windows. Meanwhile, the clock was ticking. It had been three months since Office Depot had purchased the LearnLinc softvare license. And Sonder had her own reasons for pushing

the project alone With a new technology like thus, you have to prove it right away, or chances are you're go ing to fade into the woodwork." the said

ACK THROUGH CH are marketing-oriented, Barrett Sonder figured that her best bet was to work her way back through the executive channel because CEO Dave Puente had signed the \$150,000 capital as-

set request for the bardware and software Her strategy worked. A deal was worked out through Fuer and a former senior IS official: IS would support the training

system's network, and a network technician within the training department would pro-"But I don't want to play it off like it was an easy thing," Son-

der said. "There was a lot of political posturing. IS didn't want us to have an IS person on the training payroll, but they also couldn't support us to get the

project off the ground." Sonder's experience isn't that unusual. Political battles between 15 organizations and oth-er departments, such as train-ing and human resources, are typical, said Susan J. Goldberg, president of Northeast Training Group, Inc., an IS training constancy in Newton, Mass. The bettles "often have to do

rith IS being responsible for technical training and HR hav-ing responsibility for soft skills." oldberg said.

Now running a little me than a year LearnLine has reduced training and travel costs by hundreds of thousands of dollars. Sonder said Office Denot saved \$40,000 in a week by having a vendor deliver software ing on Office Depot's interral system rather than delivering in-person training to users or its three site

Kevin Wolf, an inventory manager, is among the 1,300 users who has been trained since last May. It offered him the chance to meet several remote colleagues via video, she X-ray vision.
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An ability to see
the future.
not a new superhero
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vides compated UPS information, paging on power process and remote safe reboot of servers via user supplied modern Reseate Relay I/D Modelle — Integrates full UPS control into dry contact environments such as, PRAL tolecom ma

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The Internet

Briefs Supply closet hits the Web



REVIEW» City Web guides

Boston guides capture city's essence

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CITY GUID IS EMBODY the best the World Wide Web can offer. They gather in one place all the information available about a city, can help you plan a week-end trip, find concerts and events, locate a restaurant near the theater or give you picks for flicks. They can even help you

Boston provides a good re-viewing ground for these sites, because The Boston Globe's site. Boston.com, was launched in 1995, making it one of the first

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AUTHENTICATION

Banks report to states via E-mail link

LOBEING TO GET their feet wet with current user authentication officials next month plan to roll out a pilot project so bunks can use digital certificates to com-municate by electronic-mail

with state regulators.

"It's a pothbreaking applica-tion," said T. Louis Gutterrez, chief information officer for the commonwealth of Massa

Participating banks will use certificates issued by GTE CyberTrust in Needham, Mass., to certify the authenticity of Those reports are currently see

are typing this stuff in. It's a re Greenwood, deputy gene ed at the Massach

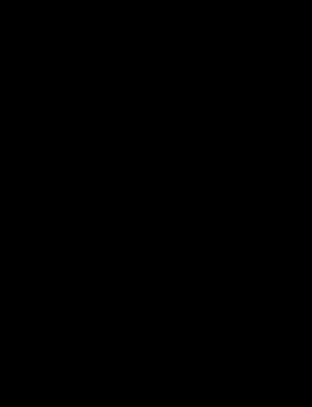
Microsoft, MCI video technology

By Mitch Wagner

MOVES BY Microsoft Corp. and MCI Communications Corp. this month to embrace video on the Internet could help boost the technology from plaything

is already moving pretty fast, and this will just speed up the process," said Tod Fetherling, director of interactive marketing at Columbia/HCA Healthcare Corp. in Nashville. The company uses Internet

video to carry "Grand Rounds." morning conferences among physicians at different hosp and health institutions.



The Internet

a scale of 1 to 5, how

Messaging	4.1
Document management	3.5
Calendaring and scheduling	3.5
Internet, Web	3.4
Workflow	3.0
Imaging	2.7
Real-time	

Briefs Supply closet hits the Web



REVIEW» City Web guides

Boston guides capture city's essence

By Laura Hunt

CITY GUIDES EMBODY the best the World Wide Web can offer. They gather in one place all the information available about a city, can help you plan a week end trip, find concerts and events, locate a restaurant near the theater or give you picks for flicks. They can even help you

Boston provides a good reviewing ground for these sites, because The Boston Globe's sate, Roston.com. was launched in 1995, making it one of the first

Web-based city guides. The field has grown since then and now includes local entries from national programs by Microsoft

Corp., America Online, Inc. and Yahoo, Inc. The regional guides either are entirely linkbased or here staff to create

original content in addition to providing links to sources. each as prevene-

The companies that produce these city guides are banking on

ide to Boston

Stations' test stem by

AUTHENTICATION

Banks report to states via E-mail link

By Sharon Machles

LOOKING TO GET their feet wet with current user authentication technology. Massachusetts 15 officials next month plan to roll out a pilot project so banks can use diental dertificates to communicate by electronic-mail

with state regulators. "It's a pathbreaking applica-" said T. Louis Gutiertez, chief information officer for the commonwealth of Massa

Participating banks will use certificates fisued by GTE CyberTrust in Needham. Mass., to certify the authenticity of weekly interest rate reports before sending them over the 'net. Those reports are currently sent by fay requirene state workers to input the data by hand.

"Sometimes bank examiner: are typing this stuff in. It's a real waste of time," said Daniel Greenwood, deputy general counsel at the Massachusetts information technology division Banks, page 46

Microsoft, MCI champion 'net video technology

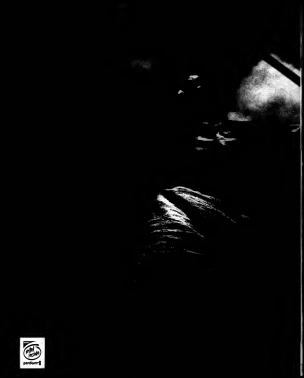
By Mitch Warner

MOVES BY Microsoft Corp. and MCI Communications Corp. this month to embrace video on the Internet could help boost the technology from plaything

"Acceptance of Internet video is already moving pretty fast, and this will just speed up the process," said Tod Fetherlung, director of interactive marketing at Columbia/HCA Healthcare Corp. in Nashville

The company uses Internet video to carry "Grand Rounds." morning conferences among physicians at different hospitals and brakh institutions.

Internet video, name 45





Internet video gains respect

fast mosk Microsoft anounced plans to buy VXtreme. Inc., a 90-person Internet video vendor in Sunnyvale, Calif. And MCI said it will add servers to its network to provide greater throughput for RealMedia audio and video from Progressive Networks. Inc. in Seattle

The Microsoft and MCI of Curry combined with other de velopments in recent weeks, indicate that the long-peophesied convergence of the Internet and video may finally be taking hold, concets said

Video on the Internet has long been seen as a toy - good for concert clips and sports foot

But communies are starting to adopt it for more serious uses, such as videoconferencing or adding marketing and sales information to World Wide With

Developments such WebTV from WebTV Networks. Inc. promise to bring Internet capabilities to television meaning companies will have a much broader channel to reach

"I look at the convergence of the internet and television as being something that's two to

three years out," said Richard Wolpert, executive vice presi dent at Disney Online in North Hollywood, Calif. "But it's one of my most important responsi

bilities to look that far out. If we wast until the technology hits the mainstream, it'll be too late We won't be able to compete One of the technologies Dis ney Online is examining is In

tercast, championed by Intel Corp. Intercast permits users to download Web documents over unused handwidth on conventional cable television signals, Wolpert said. Viewers may one day be treated to Hypertext Markup Language advertise

ments running down one ride of the television screen as their favorine shows from the ABC network - owned by The Walt Disney Co. - plays on the other side, he said

MICROSOFT MOVES

Macrosoft is maneurenne itself to be in the center of the future of Internet valen and Rob Enderle, an analyst at Giga Information Group in Santa Clara.

In addition to the VXtreme armustion. Microsoft extleri this month completed its \$425 million acquisition of WebTV Networks The Palo Alto, Calif. company makes set ton boxes that convert televasions into primitive computers capable of ewing Web pages and sending and receiving electronic mail Microsoft also has licensed video technology from VDOnet Corp. in Cambridge, Mass., and has cut a deal with Progressive Networks to make Microsoft and Progressive technologies intereperable. It will use VDO-

net's technology for videocon But video on the Internet still faces major hurdles. The bigeest: Low bandwidth, combined with low computing power on desktop machines, means that videos are still grainy and serky despite improvements over the last year, said Columbia Healthcare's Fetherling. O

Office supply giants use extranets for ordering CONTINUED FROM PAGE 43

is fast out of the gate, with 650 corporate customers that use its system, called 197. Meanwhile, Office Depot, in Delray Beach, Fla., is moving slower, with only

a few dozen companies that buy over the Internet. Both compames have been trading on the Internet since last year. Bosse Cascade expects to gen-

erate 1% of its \$2.5 billion office supply revenue on the Internet this year said Laura Longcore. marketing systems manager at Bosse Cascade. The firm will convert existing customers and existing revenue to the Internet and expects to save as cents per hae item on each Internet purchase by reducing handling and paperwork. Longcore said.

The company uses electronic commerce servers from Actra Business Systems LLC in Moun tain View, Calif., a joint venture of Netscape Communicati Corp. and General Electric Information Services. The Actra servers provide EDI transactions over the Internet The mixture of products will

let customers' purchasing departments control what individ ual employees can buy and who needs to approve each order. That's the crucial difference

between business-to-business or hospiess-to-consumer electronic commerce," Longcore

were less concerned that some-Covernment officials don't want to nick a standard and an issue ing authority only to find themselves isolated from transactions elsewhere in government and the private sector. State IS officials will meet later this year

Massachusetts is to work out Internet authentica tion standards, Gutierrez said. At the federal level, the De partment of the Treasury has launched a test with MasterCard International, Inc., Mellon Bank Corp. and GTE CyberTrust that lets participants buy U.S. sav ines bonds and surplus goods. Massachusetts officials said

osting government services on the Internet will also save tax payers the bassle of going to a state office, "When we figure out how to do authenticated filings (over the Internet), that's going to he a good day for citi zens and businesses in the com monwealth," Greenwood said We believe the citizens would

rather be online than in line "D

said. "Businesses want to control who's ordering what and what they're allowed to order they don't want to go through Bosse for that control. On the business-to-consumer side, any one with a credit card can purchase anything. But for business to business, there needs to

Buying over the Internet is very simple. They've made it easy. said Boise Cascade customer Dana Clapper, a buyer at Pujitsu Business Communications Systems. Inc. in Anaheim.

Previously, ordering office supplies required Chipper to look up parts numbers, customer numbers and special pricing in separate documents, then fax the order to Bouse Cascade after an internal review process by Fujitsu executives. Supplies were delivered in three to five days. Over the Internet, the in formation is supplied automatically, reviews are built in to the more and the order is deliv. ered overnight.

When you file an order in EDI

there could be errors in it, and you don't find out until the order gets locked back to you That's generally a day," said Paul Gaffney, senior vice president of systems development at Office Depot. "On the Internet, that checking is immedi-

Office Depot is building its Internet-based electronic commerce solution in-house. The company started early last year with just one customer, MIT in Cambridge, Mass, The company has moved slowly in its online effort because it wants to be methodical and make sure the system works perfectly before deploying it on a large scale, affiney said.

Office supply ordering is a good place for businesses to get d in electronic commerci said Peter Roden, a partner at SupplyWorks, Inc., an Internet merce consultancy in Lexington, Mass. "The risk is pretty minimal. You're buying a box of paper clips as opposed to buying something that's high value or high secrecy to it," said Roden. o was a project manager at MIT when the university did its procurement deal with Office

Banks, state link via E-mail

For now, the scale of the proj-

ect is small - only about a dozen institutions will beta-test so initial savings would be low But if it is successful, Gutisaid, he hopes the state will be able to scale up the technology across many different agencies and applications. possibly allowing the hundreds of vendors at deal with the state to send invoices and navments electronically. "There are great fields of anity." Gutierrez said. The project may be expanded to bigger, more important bank records, such as quarterly financal reports that now arrive on er. That carries more risk but also the potential for more savings, Greenwood said.

We are trying to find early lications that work ... and n scale up to our enterprise We are expecting very significant time savings and cost savines," he said, "We

are still in the exploratory phase. Massachusetts officials have tested some Internet service programs that require confidentiality but not uses authentication. For example, residents can renew their vehicle registrations and pay civil traffic online

with a credit card. Those applica ions need to be

protected from eavesdroppers, which is why they are using Secure Socket Layer encrypted connection. But state officials

one would try to assume the identity of another person in order to pay for their license plates or fines. Registration and traffic citation data aren't available on-

> "among the first haps the very first" in state govern ment to use disstal certificates for authenticating financial data, said lerry Mechling, director of the Strategic Computing in the Public Sector program at Harvard

University first stee in link Digital certifistate to users cates haven't vet

moved into the mainstream of state and local government, in part because the technology and infrastructure are relatively new

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Boston guides capture city's essence

CONTINUED FROM PAGE 4: se future profitability of the Web. Besides advertising, they offer a convenient way to point, click and buy items such as concent tickets. None of the sites here offers direct access to these services yet, and the outcome of

a local fight between Ticketmaster Corp. and Microsoft over control of links could limit ticket sales and other services (CW, May s).

With that in mind. let's go to Boston!

The ultimate guide to

Boston, Boston.com reovides news and information rom The Boston Globe and content from its ss media partners - including newspapers, magazines and radio and television stations. It offers reviews, maps, traffic and weather in rmation, real estate listings

and school information — it is everything a guide should be. oston.com has used partn ships to create the most diverse, useful and comprehensive regiorial guide in New England, It truly captures Boston's arts, culture and nature. The editorial content is well done (in addition to its media partners, Boston. com employs its own staff of 10), is ever to use and naviesty and offers many features that will continue to set it apart from other Boston sites.

One of the most-visited features on the site charts the progress of Boston's Central Arserv Tunnel Project, the nation's biggest public works effort designed to ease inner-city traffic. It gives alternate traffic routes, progress reports and informa-



The Boston Phoenix's site offers the best

tion on contracts swarded to companies involved in tunnel construction. That kind of "Boston-only" content makes Boston.com the one to hear for regional guides.

With a stellar editorial staff,

original Boston-flavored content and a slick, easy-to-use interface, Microsoft's Boston Sidewalk is an admirable new entrant to the Boston city guide scene. The database of events and information is buse.

The events and restaurant guides are a combination of listines, reviews and feature stories, which all convey a feeling of Boston A customization feature that

lets you set a profile of musical tastes, cuisines, sports and other activities is great you can see events in those categories for the week, or receive weekly electronic mail updates. The ability to search by time

period, such as what is ppening this weekend, is one of the best features of the site The lack of weather reports, traffic and local news keeps Boston Sidewalk from overtak-

ing Boston.com. But with the dollars Microsoft seems willing to spend, Sidewalk will be e contemder

GITAL CITY BOSTON AOL's Digital City sites are primarily links to other sites, although some original content can be found in the "Critic's Picks" and "On the Town" sec-

The Boston site doesn't have the feel of the city experienced in the Microsoft or Boston.com sites, and it was difficult to use. To get to the Boston site, you have to click on a map of the world, and move from there. Getting to information about a

searchable and updated often. specific event using the menus is almost impossible. Because the site is link-based.

ease of use should be a top prionty. Unless event coverage is added along with reviews and other editorial content, Digital City Boston won't be the "onestop center for entertainment, business, sports and news" that

On the plus side, I found the Wicked Good Guide to Boston Fnolyh" and a sarcastic site called 'The Worst of Boston, which "collects the bad drinking and eating establishments in Boston." Access to fun, odd sites is one advantage of the link

approach. On AOL, the site includes local news items and links to more local events, weather and shopping.

YAHOO BOSTON This is the best of the linked sines, as it is content-rich and of

fers the easy navigation of the popular Yahoo search engine. The links are incredibly comprehensive and up to date. A

music search yielded events, calendars, performance venues. musical organizations and links to 324 Boston-area artists' Web pages. The site also uses Yahoo's excellent mapping, yellow pages and chat functions

Although it doesn't offer the editorial scope of Sidewalk or Boston.com, Yahoo Boston is easy to understand and offers useful, relevant links. If you don't have a local guide like Bos-

Advertising shift

et in these types of ss? Consider these numfits, analysts and adveracperts: Forrester Ro A, Inc. in Cambridge ss., estimates that adver markets; these od will shift \$1.5 billio edia to Web ads by

on Microsof's list of Sidewalk sites, check out Yahoo's Metros guides, or Yahoo Get Local which are accessible by ZIP THE BOSTON PHOENIX

This site is offered by The Boston Phoenix, the city's alternative weekly newspaper. Although the site doesn't provide weather or other nonentertainment information. Phoesis coverage of entertainment is the best in Boston, with the most listings. reviews and links to a wide variety of other guides, museums, libraries and performance loca-tions. A searchable database and excellent interface make the site easy and pleasant to use

The site reviews the best known and lesser-known Boston exteries. It also offers access to the print edition's "On the Cheap" section, which offers reviews and information about Roston's least-expensive restan-

The focus on off-beat inch siveness found in the food and music guides can also be found in Phoenix feature articles on local issues and personalities, and book, theater and movie reviews. This well-designed site is an excellent example of how the Web can be used to deliver content in an engaging manner and offer the user more than a print

version. Cl

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The Enterprise Network

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Briefs

· Chicago Stock Exchange **Brokers get break**

fewer monitors

By Bob Wallace THE CHICAGO Stock Eschange plans to embark on a campaign

to reduce the number of desktop computers its traders use to execute trades Most traders now jump from

one computer to another to get stock quotes, monitor financial news services and view information piped in from far-flung exchanges using relatively slow terminal emulation software. The exchange's Special Sta-ion program calls for an up-

grade to NetPower machines. which have Intel Corp. 266-MH+ Pentium microp Traders will use a single graphital user interface that runs un der Windows NT 4.0 to access all applications, which will appear as icons on the screen. The Special Station prog

will start Sept. 15, but a comple-tion date hasn't been set yet. We have to eliminate m ole terminals, and that to itself will make life far eosier for our traders," said John Kavanagh, manager of communications and facilities at the exchange.

"It's the biggest challenge we Traders use workstati four monitors or dumb ASCII ninals, depending on the number of applications they need to access. One trader applauded the Special Station program.



User alliance presses Microsoft on NT

▶ User groups are a force for change By Laura Di Dio

A MEETING OF WINDOWS NT er groups last week highlight ed how informal organiza have become a force for effecting change and getting the word out about fixes and work ds not found in manuals.

The Windows NT Intrapet So lutions show in San Francisco drew about 150 attendees from more than two dozen groups The group met to elect officers and consolidate plans to lobby Microsoft Corp. for specific en-hancements, said Mark Kapcaynaki, interim president of the World-Wide Association of NT User Groups (WANTUG). The etine "is a way for regional user groups to expand and take uge of shared resources," he said. Members agreed, say-

ing that when user groups talk, About two dozen Windows NT user groups of varying size and activity are spread throughout the U.S. WANTUG was The concurse of Missions III every

ert for roaming us Availability of very large storage systems for NT

formed in June with the backing of Microsoft

"The NT user groups are a force to be reckoned with, collectively and individually," said Richard Warren, vice president of infor-mation services at fudd's. Inc., a large printing company in Stras-burg. Va. "When Microsoft hears the user groups raise problems that could be a barrier to adopting a Windows NT solu-tion, they get dealt with, fast."

For instance, the Washington NT user group and others are pushing for Microsoft to include Windows NT 5.0 support for ment devices that can supp multiple terabytes of data, such as those found in the Unix plat-form. "So far, the feedback from Microsoft has been postive, and I'm hoping this func-tionality will be part of Windows

NT 5.0," Warren said. Mike Crowley, vice pr and chief information officer at Rich Products Corp. in Buffalo, N.Y., agreed. "The NT user group is an efficient way to let our technical staff get infor-mation about new products and the first word on fiars, especially since it's not always feasible to take the time to travel

SOFTWARE TESTING Bank speeds rollout of

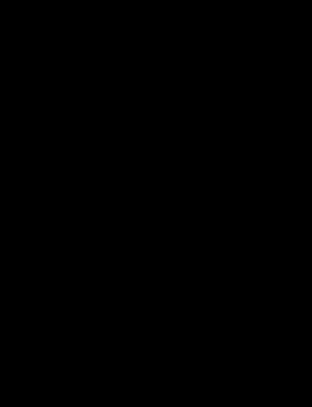
applications

Re Patrick Druden

THE NATION'S Second-large bank is overhauling the way it rolls out client/server applications to 22,000 users through

out its wide area network Information systems manag ers at NationsBank Corp. plan to slash the time needed to ensure dications work well across the WAN from eight weeks to one. They will do so by stream lining the test process and ap-plying a new off-the-shelf pernce analysis tool.

The overall savings to is tremendous, said Will Mc-Duffie, senior vice president at Nations Bank in Charlotte, N.C. "Once we get there, the new efficiency should save about \$281,000 in manpower for the dications we test [in a year]. McDuffie said. Additional "soft savines" include better softs



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Briefs

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Brokers get break

- fewer monitors

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· Chicago Stock Exchange

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Top concerns of Windows NT users: Wolfpack clustering for fault tolerance

. Plug-and-play support for brand-name adapters and · Support for roaming users

· Availability of very large storage systems for NT · Better technical documentation for new technologies

formed in tune with the backing ment devices that can support of Microsoft

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SOFTWARE TESTING Bank speeds

rollout of applications

By Patrick Dryden _

THE NATION'S second-largest bank is overhauling the way it rolls out client/sener annlications to 22,000 users throughout its wide-area network.

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to pare

monitors

CONTINUED FROM PAGE 53

is important because markets move in seconds," said Market

Traders, Inc.'s Dave Karste

"This program will help us react

to markets much more quickly, which will make us more offi-

ems will save us time, which

User alliance presses Microsoft

CONTINUED FROM PAGE 53 week's worth of classes." Crow-

Other features NT user roups are pushing for include Wolfpack clustering (due within the next six months), support for roaming and mobile users, plug-and-play support for brand-name adapters and peripherals similar to what is available for Windows 95, support for very large disk storage sys tems and better technical docuentation for the new Internet



for name-brand adapters and peripherals. The fact that we en't have it yet in Windows

group helps us avoid the prat-falls of using incompatible de-vices by telling us what's safe," Exchange

Crowley said. Dennis Martin, president of the Windows NT Rocky Mountain Users Group in Denver -which has about 600 dues paying members and more than 3,000 users on its mailing list - said the group often prov

with

That was the case in January, be said, when Microsoft shipped a buggy Service Pack 2 relifier Windows MT dows NT 4.0. The Rock Mountain Users Group and several other groups found work-arounds for crashes and other common problems well before crosoft shipped a petch. Mar

to revolutionize stock tradifor years, but it sounds like may he we're going to see some results soon," said Hans Stoll, director of the financial marke research center at Vand

University in Nashville. Traders at the nation's sec ond-largest stock exchange use

an autoquote application that fa-cilitates trading by letting other exchanges know at what point a trader is willing to buy a stock. Also provided are fi

ormation services that let traders know what is happening out-side the exchange. They are piped in vis wide-area network links and 3Com Corp.' routers.

Traders saw slow respo times and unpredictable perfor mance using the old system.

Kavanagh said. Because applications wit graphical interfaces generate re network traffic than net work emulation, the exchange had to pull off a sweeping LAN

infrastructure upgrade to set the stage for Special Station. It replaced its shared 8th network with Ethernet and Fast Ethernet switches, as well as routers from 3Com. It also re-placed Cabletron Systems, Inc. hubs and Bay Networks, Inc.

routers, Kavanagh said.
"We weren't heavily utilizing the shared LANs, but we were experiencing data collisions and decided to make a move upward," he said. 'That problem went away with the upgrade because we installed switch-

The upgrade was done in stages over a period of six weeks, during the hours after the exchange closed. Traders desktops were disconnected from hubs and connected to the switches. "End users nev w an upgrade happened."

ing [in the user group] for Misoft to hurry up and deliver plug-and-play support in Winpack clustering is a very ws NT. It's a beautiful thing big deal for us. We're also push-NT is irksome, but the user in Windows os because it pro-

Cabletron readies remote access products for 56K

By Marc Ferranti CARLETSON SYSTEMS, INC. IS set to bolster its CrberSwitch line with new remote access products that support 56K but/

Rochester, N.H.-based Cabletron next month will ship two new remote access product lines: the CSXDIG modern module and the DSX 5500 cen-tral site access server. Both support the 56K Flex standard proused by Rockwell Serriconductor Systems Ltd. and Lucent Technologies, Inc.

The CSXDIG, which com in 24 and 30-port configurations, is a 56K bit/sec. digital modem module for Cabletron's CyberSwitch line of central site te access platforms. It

costs \$479 per port. The modules support analog and digital moderns on the same Integrated Services Digital Network (ISDN) ports. They can also allow analog modem dial-in calls via channelized T1

The CSX 1500 central site access server provides six modular slots that support more than 120 simultaneous remote users. Prices for various configurations run from \$171 to \$600 per

It offers four WAN connections and two LAN connections. and supports ISDN, frame relay. leased lines, switched 16/64. and X.25 interfaces. O

Fernanti writes for the IDG News Service in New York

Bank speeds app rollout

reliability and performance, he said, plus more time for engineers to pursue other projects. The process of moving client/ server applications out of the lab and onto the production net

work frequently exposes perfor mance problems, according to Theo Forbath, a consultant at Northeast Consulting Resources, Inc. in Boston. Delays and constrained band width of WAN connections can cripple the performance of ap-

plications that had worked well on a developer's LAN, Forbath said. So programmers must re-vame core transactions, or network managers must boost bandwidth, both of which stall

rollouts and tack up costs. To address that problem with a protocol analyzer and then check the exchanges line FROM EJOHT WEEKS TO ONE

Automating nome steps in a new test lab reduced that task eight weeks to five, McDuffie said. Now he expects to accomplish the same work in one week with the help of Appli-cation Expert software from Optimal Networks Corp. in Palo

Alto, Calif. The tool puts a graphical from end on the trace data, McDuffie said, so an engineer can quickly and easily analyze transactions and evaluate possible changes.

NationsBank dedicated a net work engineer to gather the pi-lot application's transactions

We can just about cover the cost of the product through the time it saves an engineer to do one analysis," he said.

Application Expert runs on a Indows NT or Windows os PC with at least 32 M bytes of memory and the ability to monitor the traffic between the designat-

ed client and server. It costs Thile trying out the new re

view process, network engineers discovered a turnkey application that didn't perform as promised Optimal's tool showed that the application generated more traffic than the vendor advertised. McDuffle said. IS and the client were able to get the offending software reworked to batch its requests for lower overhead. "The WAN is our critical

funnel, so we must pay close ation these days to how well applications are built," be



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LEADING EDGE TECHNOLOGY WITHOUT THE ATTITUDE

11

Software

Detabases 'l Development + Operating Systems

Briefs_SAP links homegrown supply chain

By Randy Weston

SAP AG is bringing supplychain management functional ity home

The Germany-based software ent is building an application r its flagship business process automation system, R/3, that is

supplies.

SAP has relied on other ven-dors, including Ia Technologies. Inc. in Irving, Texas, to supply sality to R/s cu Others are Manuelstics, Inc. in

Rockville, Md., and Numetrix Ltd. in Toronto.

"SAP has deals with everyon in this area," said Bruce Rich ardson, an analyst at Advances Manufacturing Research, Inc. in Boston, "SAP (officials) told us three years ago they want to own every element in the supply

SAP is to release details abou the application, such as which onality will be included and a time line for its release, at the company's user group con ference Aug. 24 in Orlando, Fla SAP, page 60

Shipper automates sales force

By Kim Girard

SEVERAL MONTHS ago, empl ees selling cargo space for Maersk, Inc., one of the world's largest shipping companies, still stuffed customer account inforation into file cabinete

Some sales managers - who are making multimillion-dollar deals - connected to the office mainframe using old laptops from home; others printed information from computers at a branch office. Little valuable information was shared among the sales force, and when employees left, client his Shipper, page 60



Middleware scales new objective

By Tim Ouellette

Spurred on by users who want to bolster their object-

oriented applications with high VENDORS ARE GIVING middleware a new objective. powered data messaging, ven-MIDDLEWARE IS THE OBJECT

> Communications options for Tibco's messaging middleware/object technology fool

- I Internet Inter-ORB Protocol support
- I Internet broadcasting or Tibco's proprietary multicasting data messaging
- Multithreading for asynchronous data requests -
- Subject-based message addressing

dors are starting to merge the The first true effort comes from Tibco Software, Inc., recently anno TIB/ObjectBus a.o, an object re-

quest broker (ORB) that is com pliant with Common Object Re-Broker Architecture (CORBA) 2.0 and that is built on top of Tibco's Rendervous messaging middleware.

HORE AND MORE

The move is impo object technology has a lot of momentum, but it still can't scale to the huge number of eware, page 64

COURSEWARE

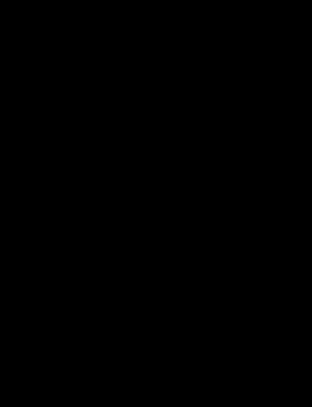
Software aids in design of training material

By Matt Hambles

AS CORPORATIONS begin to use more computer-based train-ing for teaching everything from customer service to sales. trainers feel more pressure to plan coursework and standard ize it no matter which trainer

leads the teaching More companies are a computer-based training, usual ly with CD-ROMs, someti

Course design, page 60



Software

Datebasae + Development + Operating Systams

iefs SAP links homegrown supply chain

Worldwide workflow and



By Rundy Weston SAP AG is bringing supply-

chain management functional ity bome The Germany-based software grant is building an application for its flagship business process

meant to help businesses manage inventory and better plan and schedule the use of SAP has relied on other yen

does, including 12 Technologies, Inc. in Irving, Texas, to supply functionality to R/s customers. automation system, R/3, that is Others are Manugistics, Inc. in.

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Middleware, sace 64

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MORE AND MORE

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More companies are adopting computer-based training, usual ly with CD-ROMs, sometimes Centra design, page 60

SAP supply chain

take SAP at least 18 months to develop the application, and many companies that need to rein in their supply chain may

not want to wait. Those users can still turn to the third-party vendors that SAP has promised to continue sup-

But users who can bold off may get a better deal because

SAP is likely to include the supply-chain module in the existing total price of R/3. Buying a system from a third-party player tacks on another \$1 mill \$2 million to the price of R/3. which can reach up to \$10 milhon with services.

"It's a function of how much in do you want to endure and ow aggressively do you want to approach installing a supplychain system," Richardson said "People are spending a fortune on supply-chain software, and the fact that you will soon be able to get supply-chain man agement systems from your (enterprise resource planning) ven-

dor to very attractive." Scientific Atlanta, Inc. is willing to wait. The \$1.1 billion mak er of equipment for the cable and telecommunications industry has completed 90% of an R/s installation it began in June

1995 Scientific Atlanta is looking at supply-chain manage functions to tightly control subcontracted manufacturing work and delivery of items such as modems and lasers from suppliers such as Motorola, Inc. in Schaumburg, III., said Greg Wilson, group director of information technology at the Atlanta

Although Scientific Atlanta was planning to use supply-chain functionality from a third-

more topics," said

Hall, editor of

Multimedia and

Internet Newslet-

Trainers

evaluate

vendor, the comp would be willing to wait for SAP to come out with its own module because of the tight integra-

tion that product will have with the R/s module, Wilson said. "We have been looking at our supply chain since the begin

ning of this project," Wilson said. "Our main function for putting SAP in is to integrate. We had a lot of different system in our divisions. We put in SAP to get the basics, and now we can look at other options from them, like supply-chain man

Shipper automates its sales force

"It was, 'Whatever you want to do,'" said Lee Johnson, a re-

gional sales manager in Los An-geles who has worked at Maersk for seven years. "We didn't have Campbell, Calif.: [a system]. We had a primitive

"It enables you to ... plan and organize sales calls on a much higher level."

- Lee Johnson, Maersk tabase that covered about ay%

of our cust Chris Ruhalter, sales automa ion manager at the Madison. N.J.-based company, last year aimed to save the sales force time and the company money

by changing the customer mannent application from main frame to an easy-to-use client/ server platform. Maersk looked at software from Saratoga Systems in

> Technologies. Inc. in Vancou ver, Briffsh Cohumbia; Aurum Software, Inc. in Santa Clara. Calif.; and oth-

er companies before choosing upstart Borealis Technology Corp. in Carson City, Nev. Borealir' software was the easiest to adapt to meet the needs of the sales department, Ruhalter said. "A lot of the [other sales] sys-

terns are overbuilt, and son systems have a built-in methodology applied to them that doesn't apply to the way we sell," he said. Johnson said he soon will be

able to filter - assign categories to 22,000 accounts based on a customer's financial history and query for reports that will help him determine customer buying patterns. He will also be able to separate customers into groups - for instance, all customers in the Los Angeles area or all import accounts from Hong Kong - so be can target sales pitches or send faxes more quickly and easily.

Maersk began to install Arse nal 3.0, Borealis' sales force automation software, in late May and finished the job last month - much quicker than the expected six to 12 months. Borealis' challenge - in a market where projects often fail - is to deliver on its promise of

s shorter installation time and provide a system that is easy to use, said Chris Pavlic, an analyst at Aberdeen Group, Inc. in Boston. "If it's not easy to use, the laptop will stay in the car trunk under the old golf clubs," Pavisc

Maersk's 200 sales represe tatives and telemarketers use IBM ThinkPad 760 PC notebooks that run Windows 95 and are equipped with remote access software from XcelleNet, Inc. in Atlanta. Users dial in to a Hew lett-Packard Co. 9000 server The company created a virtual private network using IBM Says

routers. "Once we get this up and running, we'll have 80% of customers covered," Johnson said. "It enables you to manage your time better, track customer contacts much better and plan and organize sales calls on a much higher level." D

Course design software enabled us to embed perfor supplemented with instru

mance metrics in the process, analysts said. Not only is the new anoroach less exp said Donald C. Highley, a top trainer at SBC. "A company may have a process (for designing than arranging travel and lodg ing for trainers or trainers, but it also adds flexibility, analyst courses] in place, but the tool to do it is nonexistent." Brandon Hall said.

At Sprint Corp. in Kan The crunch is for more City, Mo., Designer's Edge is betraining for more people, more quickly and in more places on ing used to prepare in-class training courses

he used for the company's intra-net, said Dan Revelle, manager of training and develcoment progra

at Sprint. "The poftware allows us to take a Sprint training process and auto mate that with

templates and wizards and training cards." Revelle said. Once con

ed, the material can be anded off to a teaching team "It forces every course to be de veloped the same way," he said. Gartner Group, Inc. in Stam ford, Conn., estimated that the worldwide market for technol-ogy-based training reached \$10 on last year and would rise to Sta billion next year. Technol ogy-based training was 16% of

the total training delivered last year, but that number is expect ed to reach 35% next year, ac cording to a survey last year by Decising magazine. In a survey of 1,375 course de velopers, CET Solutions in Hingham, Mass., found that no

one course-suthering tool owned the market, althoug licenses of the software, which software from Allen Com cation was listed as most of om Macromedia, Inc. in Sa

ter" in Sunnyvale, they need to ask many questions before training beeins, including: Is using an instructor better than using a computer-based approach? What are the best ways to perforince? How can you justify the training cost to

upper management? At SBC Center for Learning in trying. Texas, trainers tackled pretraining concerns by using software that leads a course design team through a series of questions and checkpoints to plan and prepare courses. The software, Design

Edge Pro 2.0, was developed by Allen Communication in Salt Lake City and Amstech Corp. in Nashua, N.H. Two analysts said the software is innovative because it asks preliminary ques tions for course design that existing course-authoring tools don't provide.

SBC has been using 68-sent

cost \$2,995 each, to build courses for 60,000 employees at Southwestern Bell Corp. The program "has chang our whole procedure, and it's

3-TH-S PM BAS DECOME A PRICATERING TIME FOR CITY PARENTS.

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CAREER AGENT

Middleware's new object

CONTINUED FROM PAGE 59

users and mix of application platforms needed to run enterprisewide. More and more people are finding out [that object technology's] synchronous processing doesn't work well enough," said J. P. Morgenthal, a Java computing analyst at NC Focus, a consultancy in Hewitt, N.Y. "You really need that guaranteed delivery messaging mid-

re can provide. CORBA was built using synchronous messaging, which requires a direct con nection between hosts - even if one is in a remote location — and can cause problems when one side is unavailable or

On the other hand, messaging middleware products such as Tibco's Rendezvous and IBM's MQSeries use asynchronous data messages to provide guaranteed and secure delivery of data among applications on different platforms and

can scale to very large installations. In fact, Rendezvous has had a 10-year history running in high-performance financial systems, which need reliable, un-to-the-minute data exchanges among applications.

"The fact that it is based on Rendezvous, a well-established product, means the

networking infrastructure is more proven," said Nigel Barnes, a consultant at Andersen Consulting in London, who is working on an ObjectBus project. For example, Rendezvous will let users

make one request for information about a subject, and messages on that subject will so to the user from all enterprise applications ned to ObjectBus.

The move is important because object technology has a lot of momentum, but it still can't scale to the huge number of users and mix of application platforms needed to run

enterprisewide.

But object remnest brokers would require users to query each enterprise data-

Users have also noted that better integration of object and messaging middleware technologies will trim training and labor costs, because companies wouldn't have to hire two sets of skills

Still, though object technology has taken off, both approaches have been an expensive and complex proposition that has slowed overall adoption. Few shops try to use both technologies Other vendors have bolted topeth object-based programming and middleware, but Morgenthal said Tibco's effort is the first time a vendor has built the ORB on top of middleware product for better performance. The industry has taken note of the possibilities of such a

Last winter the Message-Oriented Middleware Association, made up of vendors in the middleware arena, agreed to deliver products similar to ObjectBus a.o. and Digital Equipment Corp.'s VMS plat-[CW. Feb. 17] Vendors involved include

IBM, with its Component Broker product line, and San Francisco-based Peer-Louic Inc. Products aren't expected until next

Tibeo, in Palo Alto, Calif., will ship TIB/ObjectBus 2.0 in the fourth quarter. It will cost \$600 per client and \$5,000 for a developer's kit. The product will support Unix, Windows NT

SIEMENS

Before you buy another phone, check the



SEAGATE SOFTMARE has announced Seagate Direct Tape Access 3.0, software that controls access to tape storage and other media devices from within any Windows

application.

According to the Heathrow, Fla., company, the new version lets users drag and drop folders or entire hard drive contents to copy targets such as tape drives, hard

drives or network drives.

Scheduling options are included for copy automation. A new disk caching feature writes data to disks and tape simultaneously.

The product costs \$79.
Seagate Software
(407) 531-7500

TEXRAM TECHNOLOGY has announced On-Camera Video Mail Kit, which enables users to create video-mail messages.

According to the Fremont, Calif., company, the multimedia bundle supports the production of two-minute digital movies with audio that can be compressed to 1M-byte files and transferred with electronic-mail messages sent over

the Internet. The kit includes the video mail software, a full-motion video cap ture card and desktop color camera.

The package costs \$225. Tekram Technology (Boo) w6-6m8

www.tekram.com

NOFAX IMAGE PRODUCTS has announced Storage Controls 1.0, a new ActiveX tool kit for integrating optical jukebox storage controls into Windows applications.

The Irvine, Calif., company said the development tools help create applications that let users access and manage one or more optical device or jukebox subsystem running on Windows NT or Novell. Inc.'s NetWare. Festures include a file-management control for transfering documents to shared optical devices on a network and a volume-management control to search networked volumes for information and files.

Storage Controls 1.0 costs \$995. Kofax Image Products

(714) 727-1733 www.kofax.com

INFORMATION ELECTRONICS, INC. has announced Eureka Gold, software that uses artificial intelligence to determine if electronic-mail is junk mail.

The St. Simons Island, Ga., firm said Eureka Gold with Anti-Spam installs on E-mail servers. It was designed for highvolume installations, but the company priced it for small enterprises. Anti-Spam definition updates are free.

Eureka Gold costs \$1,000. Information Electronics, Inc.

(912) 658-1893 www.ie.com

> SOFTKIT TECHNOLOGIES, INC. in Montreal has announced Live Access, software that uses hyperlinks, visual content beowing and imaging to increase information retrieval abilities. Users can link and access documents

> Users can not an access occurrents that reside anywhere in their computing environment, including the Internet. Using features called Live Guide and Live Space, users can create a custom hierarchy and link documents to drawings,

maps and images.
Live Access costs \$195.
Softkit Technologies

(514) 393-3467

KETW TECHNOLOGIES, INC. has announced ArchT 14, an architectural application for

AnnoCAD designers.

The Portland, Ore. firm said new features in the Arch? 14 release include
ObjectAEX steel-detailing capabilities,
the ability to design curved walls and
stairs and integrated support for AutoCAD Release 4, rendering in Windows
NT and Windows 59; The installation
and setup of Arch? 14 also has been
and setup of Arch? 14 also has been

streamlined. ArchT 14 costs \$495. Ketly Technologies

expiration date.



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Servers & PCs

Lorge Systems + Workstations + Portoble Computing

Briefs Workstation power to the people

▶ PCs with RISC-like punch for less money By April Jacobs

UPCOMING INTEL Corp.-based workstations that cost a fraction of their RISC-based counterparts offer to give users power that was once considered too ex

The systems can run new apications or older ones ported om Unix and proprietary oper ating systems, such as Digital Equipment Corp.'s VMS, to the



"We had no DEC worksta-PCs," said Henry Peterson, field tions that were running on VMS. But now that the software and systems coordinator we were using can run on NT,

prices on Unix servers-Dy Ed Golden

Sun slashes

A PAIR OF New notebooks from Panasonic Personal Computes Co. aren't only loaded with fea tures at a reasonable price, they can also take a licking. Panasonic's "rugged" CF-as is aimed at markets such as law

enforcement and is promoted as an indestructible unit. The second notebook, the CF-35, which Panasonic calls Slimline, is less ruggedized but still shock-resistant. The CF-35 is an MMX muldia machine, with a fivebour battery, fast 128-bit sal Serial Bus (USB) port.

Both notebooks ship in 133 and 150-MHz configurations with up to 64M bytes of RAM, books. Both machines flash a re-13.1-in. Soo- by 600-pixel this

Panasonics can take a punch Rugged machines deliver on power, durability film transistor LCD, 32-bit PC Card support, a sound card and a "multimedia pocket" that can By Lenny Bailes -

accept a floppy drive or an op-tional ro-speed CD-ROM unit.

DR GLITCHES We discovered a minor pro with Symantec Corp.'s Norton

Utilities 2.0 when we swapped out the floppy drive. On both notebooks, this action caused the Norton Protected Recycle Bin to behave erratically. You can bypass the problem with a bundled cable that permits the floppy drive and CD-ROM to op-

I would prefer that Pa (www.panasonic.com) thipped ei-ther a Windows 95 CD or a set of OEM disks with these note-

REVIEW > Gateway Solo 9100

Powerhouse laptop weighs heavily

raz sozo 9100 notebook PC from Gateway 2000, Inc. (uww.gurzk.com) makes people sit up and take notice. I know because I walked into a meeting room, put my Solo-laden briefcase on the wooden floor and

the thump from the 9.2-pour ne woke up everyone at

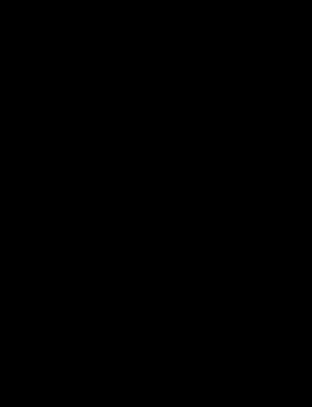
166-MHz Pentium MMX CPU and extensive multimedia capsities that position it well for a marketing representative who does complex road shows. How-ever, the weight takes its toll on your arm at the end of a travel

needs typically in

g, the Solo 9100 may be ch on a fat Microsoft Corp. verPoint slideshow, and the play turned in a credible perince on animated games

transistor display is large at 13.3 in., and it's sharp. The viewing





Servers & PCs

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Briefs

ALE servers

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act five models from \$1,999 to \$1,198. The 530, with a 133-Mi MMXL 16M levies

rk price lags d

Workstation power to the people

▶ PCs with RISC-like

punch for less money By April Jacobs

HECOMING INTEL Corp.-based workstations that cost a fraction of their RISC-based counterparts offer to give users power that was once considered too ex-

The systems can run new aplications or older ooes norted from Unix and proprietary oper ating systems, such as Digital Equipment Corp.'s VMS, to the

Benefits of the new class of PC workstations

Low price, \$5,000 to \$15,000

. High performance, 200-MHz and higher processors Intel/Windows-compatible

Wintel platform. We had so DEC workstations that were running on VMS. But now that the software we were using can run on NT,

we're soins to high-power PCs," said Henry Peterson, field and systems coordinator at Holdeo Engineering and Sur-Workstations, page 68

edia pocket" that can

Sun slashes prices on Unix servers

Po Fd Golden .

Sun Microsystems, Inc. last week announced a price cut on its low-end Ultru Enterprise 3000 departmental Unix server and revealed plans to add a high-end feature to that end other Ultra Enterp

marbine Sun will cut prices on the Ultrs Enterpoise 3000 by up to 27%, officials said. And by the middle of next year, the mtain View, Calif.based firm will add dynamic reconfiguration/alternate pathir in the high-end Ultra Enter rise 10000 — to the Ult Enterprise 3000, 4000, 500 and 6000 servers, Sun said.

The dynamic reconfic tion/alternate pathing feature bles CPUs, memory and I/O devices to be atta and detached without di rupting a user's enviro Ultra Enterprise 3000 pric es start at \$43,350 for a con

eration with two 157-MHz UltraSPARC processors and 205M bytes of memory. An upgrade will be available to dd dynamic reconfiguration/ alternate pathing capabilities to the Ultra Enterprise 3000 6000 systems. - Golden writes for the IDC

Panasonics can take a punch REVIEW MMASONIC PERSONAL APUTER CO.

CF-25

Price: \$4,199 - Virtually inc large, thin film than-

sistor (TFT) screen cates PCMCIA slot fast performance Cons: Lacks onboard micro input; no bundled rting system metall disks

or CD variated CF-15

Price: \$3,900

Pres: Lightweight: long buttery life: large TFT screen fast graphics adapter, very fast Const No bundled operating system unstall disks or CD included

Rugged machines deliver on power, durability film transistor LCD, 32-bit PC By Lenny Bailes

Card support, a sound card and A PALE OF NEW Hotebooks from accept a floppy drive or an op-Panasonic Personal Computer Co. aren't only loaded with feational to-speed CD-ROM unit. tures at a reasonable price, they can also take a licking. HINOR GLITCHES Panasonic's "rugged" CF-25 We discovered a minor problem

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and 150-MHz configurations

with up to 64M bytes of RAM.

1a.1-in. 800- by 600-pixel thin

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of OEM disks with these notebooks. Both machines flash a re-News Service in Besten. Panasenic, page 69

REVIEW > Gateway Solo 9100

Powerhouse laptop weighs heavily Solo ozoo is slick, feeturing a

By James M. Connolly THE SOLO 9100 notebook PC

from Gateway 2000, Inc. (unusegualcom) makes people sit up and take notice. I know because I walked into a meeting room, put my Solo-laden brael case on the wooden floor and the thump from the q.a-pound machine woke up everyone at the table.

People also notice that the

166-MHz Pentium MMX CPU and extensive multimedia capabilities that position it well for a marketing representative who does complex road shows. However, the weight takes its toll on your arm at the end of a travel day.

TOO MISCH For someone whose mobile computing needs typically inmail and World Wide Web browsing, the Solo groo may be overkill. However, it didn't flinch on a fat Microsoft Corp PowerPoint slideshow, and the display turned in a credible per formance on animated games and video clips.

The active-matrix thin film transistor display is large at 13.3in., and it's sharp. The viewing Gateway, page 68



Precessor: 150-WHz or 160-WHz Pentium MWX Memory: Up to 160M bytes

Herd disk: 36 bytes Walnut 02 no Price: \$5,699

Workstations to deliver power for less

based machine

ing, Inc. in Concord, N.H.

"For a change, the software companies are resolving their applications around and trying to meet the needs of the asses," he said.

Peterson said his company wasn't get-ting any more performance out of Sun Microsystems, Inc.'s SPARCstations that cost about \$20,000 than from high-powered PCs from Gateway 2000, Inc. that the company purchased several months ago for about \$8,000 each.

The Gateway 2000 models have 200-MHz Pentium processors and 128M bytes of RAM to handle number crunching and memory-intensive applications that churn out highway designs.

Compaq Computer Corp., Hewlett-Pack-ard Co. and Dell Computer Corp. have all committed to Pentium II-based machines that will be rolled out as PCs or PC workstations and will offer

single- and dual-processor configura-The systems are based on Intel's new 440 LX chip set and feature an accelerated graphics port, which is key to in-

creasing performance in a visually ori-"Vendors are offering high-performance graphics at a much lower cost than RISC-based systems with all of the things that make a workstation-class machine," said Chris Goodhue, an analyst at

Review: Gateway Solo 9100

CONTINUED FROM PAGE AT

area is comparable to that of a 14-in. desktop monitor, and the image may be under decent office lighting.

Battery life was about two hours without power management features en-The most interesting aspect of the

Solo groo isn't the power, the weight or the weighty price (\$5,699, with 64M bytes of RAM). It's a neatly integrated CD-ROM and 1.44M-byte floppy drive

Both drives fit a single bay, eliminating the need to carry extra storage devices and wires. C



Goodhue said the average Intel-based PC workstations are expected to cost about \$5,000 to \$10,000 vs. the \$20,000 to \$30,000 cost of a RISC

But other users said Wintel-based an plications aren't plentiful enough and performance isn't high enough to warrant a change in hardware platforms. "The Pentium-based systems are co ing very close in performance at the low end to RISC machines, but I'm not so sure about the stability of applications that are new and running on NT," said an information systems vice president at a large New York-based financial company

who requested anonymity: Still, lower cost coupled with standard-ized hardware will make the new class of PC workstations an attractive option to many companies — and new types of users, Goodhue said. O

totally expandable,



Panasonics pack a punch

current reminder to create setup disks.

The message persists until you decide to format 35 floppy disks and insert them.

an automobile (as one reviewer recently boasted he had done), but I did drop it successively onto a hardwood floor from heights of a to 5 feet. I also poured water on the keyboard with the power on. The notebook's sealed keyboard and hard, magnesium-alloy case defeated all at-

The message persons turnly undersor to format 3, largey deservation in the them. In minimal few several several turnly of the several several

The CF-25 weighs in at 7.7 pounds and has well-implemented advanced power management features. Battery life was 3.5 hours. You'll find th PCMCIA elots instead of the use

I benchmarked the CF-a3 as a fast per-former, scoring above similar notebooks and deaktop models on PC World's WorldBench office productivity bench-

The Panasonic CF-35 is lightweight (only 5 pounds), fast and powerful. Its five hour "coast-to-coast" battery life should nd this machine as a tool for

The CF-35 is partially ruggedized— sturdier than the average laptop but not designed for the really rough stuff. Pama-tonic rates the CF-35's carbon-fiber lower case at seven times the strength of ordinary notebook plastic, but its LCD display rated at the same strength as the CF-a₅. The hard disk is buffered in poly-mer gel to abooth shock. I didn't verify the CF-35'a durability by dropping it.

The CF-35 clocked in even faster than the CF-at on PC World's WorldBench. The unit is enhanced by an onboard USB port, but the notebook ships with the port turned off and no CMOS option to activate it. Panasons: intends to offer a flash BIOS upgrade for CF-55 users after Microsoft Corp. ships Windows 98 with a set of debugged drivers. O

Builes is a San Francisco-based writer. He can be reached at lennyb@slip.net.

nounced Advantage RAID, a self-con-tained desktop RAID Level 5 storage system aimed at the small business and Internet storage markets.

According to the Irvine, Calif., com-pany, Advantage RAID bouses six hard disk drives that can be swapped without cutting power, a 32-bit RISC micropro-cessor and a RISC-based, embedded RAID Level 5 controller.

The system is available in a 20G-byte configuration and can connect to any computer system with a SCSI port or SCSI host adapter.

It costs \$6,995 Micronet Technolo

(714) 453-6100

PROCON TECHNOLOGY, INC. has ann a 12.7mm, 3G-byte hard drive for laptop computers.

According to the Irvine, Calif., com-pany, the hard drive is compatible with small notebooks made by several manufacturers, including IBM and Compaq Computer Corp.

Pricing starts at \$1,075.

Acer

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Briefs



Storage role grows for data warehouses

► Users seek optimized frame frame

By Tim Ouellette

LOCATION, location, location, Users are deciding that where their data warehouse's data is stored is as important as the database and tools that sur-

As a result, users who build data warehouses are taking more care to choose a disk array what will have

that will best of fit their performance and capacity needs, we instead of setting for a con-

array they could purchase from their server vendors. That's because, as users start to depend more on their warehouses for strategic business

gains, they know storage will be an important factor in whether users deem the warehouse a success.

Where some disk arrays are better suited to high-performance, real-time decision support, others work well in mainframe batch situations. For example, MCI Communi-

cations Corp. evaluated disk arrays in addition to choosing database software and a server platform when it was building its consumer sales data ware-

"We wanted the fastest of all components for our warehouse," said Chip Grim, MCI's data warehousing manager, "We evaluated each piece server, database and storage —

on its own merit."

The telecommunications giant's consumer products data warehouse runs on IBM 733 Serial Storage Architecture (SSA) disk arrays, which are

7,3T bytes of data.

The selection was based on SSA's speed gains over disk systems that use traditional SCS1 I/O connections. For example, in MC1s tests, SCS1 arrays pumped data at 4M byte/sec.

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and SSA handled yyM byte/sec.
Users and analysts agree that
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try and software tools all play a

Seeking common ground

IN ITY PARCENT OF COPPORAR America is stampeding to implement data warehousing, according to studies. Slow down! Not all companies need a full-fledged data warehouse to solve their most press-

ing problems.
There are at least two big motives for building a data warehouse: to get better information to end users faster,

data held in disporate systems to give a unified view of the organization. For some companies, unify

ing data across the business is a very important objective. And although a decision-support system can help achieve that unity, given the choice, those companies would rather unify their disparate operational systems. Because it often seems impossible to reconcile operational systems, managers see a data warehouse as the next best way to unify the company.

unify the company.
Unfortunately, it is costly and challenging to build a data ware-house that spans the enterprise. Almost by default,

the enterprise. Almost by default, most companies opt to create a seties of subjectoriented data marts that each serve a department

Offen, those data marts operate independently of one another. Thus, data marts may provide good data access, but often at the cost of the enterprise view. If unifying the business is your goal and you can't afford an

Atre, page 72

Insurer gets a quality check on decision support

By Linda Wilson

BACING AGAINSY a deadline, Blue Crosh Blue Shield of Tennessee populated an SoG-byte data wavehouse in just five months last year. After the warehouse was in production, however, the insurer discovered that the data offen was inaccurate or

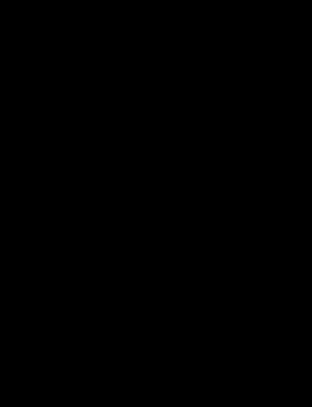
incomplete.
Now the company is on a fullscale data-quality program.
By year's end, Blue Cross/ Bite Shield of Tennessee plans to implement a program to produce monthly audits of quality

that will measure 50 to 100 data elements about medical encounters, members, insurance products and medical providers for accuracy and completeness. The results will be recorded on the cree cards and shared with people who rely on the data for anal-

Blue Cross, page 72



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Storage, page 72

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Blue Cross, page 72



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Blue Cross

from which the data originates.

The insurer also plans to find the cause of data errors and implement husiness process or systems changes to eliminate

"We wosh we had more time to work on those issues in the beginning, but we didn't," said Frank Brooks, director of data resource management, who heads a 23-person staff dedicat ed to the warehouse, related date marts and data-quality isuses. The warehouse and morte are used to analyze the costs and quality of care the insurer's

managed-care enrollers receive. Blue Cross/Blue Shield isn't the only company interested in data quality, of course. Richard Rist, vice president of The Data Warehousing Institute in Gaicessing system. thersburg, Md., mid, "The market is beginning to recognize ning in such a sbort time was a

that quality is key And for good reason. As much as an% to so% of the data in the typical corporate database can be missing or inaccurate, in the experience of Information Impact International, Inc., a consulting firm in Brentwood. Tenn, that being companies devise data-quality strategies and

perform audits. Data-quality problems occus when data is moved from legacy systems to new operational systems or warehouses. Another big source of problems is within the source systems themselves. which may contain incomplete

Blue Cross/Blue Shield of Tennessee in Chattanooga imposed the five-month deadline on at \$2 million warehousing project because it wanted the warehouse ready to accept data from a major new claims pro-

huge undertaking. The ware-

house, stored on an IBM main

frame, includes 5,000 data ele-

ments and 225 DB2 tables

Getting the warehouse run-

Source data on clasms, man aged-care and medical providers comes from three operational systems the mainframe run ning MVS an RS/6000 run ning AIX and a Hewlett-Packard Co. box running Unit.

The insurer used Prism Warehouse Manager Prism Solutions, Inc. in Sunmy vale Calif. to transform source

warehouse and to compile meta Cross/Illus Should con't won The data wagehousing mitta tive was propelled by the man aged care environment in which quality strategies we employ Blue Cross/Blue Shield oper

Total Cost: \$2.19W

Stee: ROG bytes

Jears trained: 200-plus eta etements: 5,000

ates. The insurer is involved in using Cognos Corp. tools. managene the health care of its enrollees rather than just paying claims, as had been the case Therefore, it needs to show cus tomers, government agencies and trade accorpations informs tion about its performance.

QUALITY QUESTIONS Without reliable data about

costs and quality of care, Blue managed-care contracts. "Customers are starting to ask questions about what kind of data Records sand To start, Brooks' fearn must

decide which data elements an most important and should be It also must decide how quality will be defined and evaluated. For example, the team must determine whether data elements are entered in every field. if the elements are accurate and if they make sense in relation to elements in the other fields.

The team also is in the midst

After those issues are ironed out and quality audits are completed the insurer will have to decide which problems to fix

and in which order to fix them Blue Cross/Blue Shield is already fixing problems. For example, is added a rule in which enrollees aren't entered into the system without a Social Security number. That rule change was added because many members records were missing Social Security numbers, which made it difficult to reconcile duplicate files for an undividual or store all of an andmidual's claims in one

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Of course, the rationale be

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of deciding whether to purchase Wilson is a freelance writer in Glen a specialized data-quality auditing tool or to write programs Elion, III.

Atre: Seeking common ground

CONTINUED FROM PAGE 71

We call it the "consolidation" warehouse. Like a standard data warehouse, a consolidation warehouse brings together and transforms data from multiple data stores into a single logical database. The key difference is that the consolidation ware house is intended to serve pri manly as a "common ground" to bring together transactionlevel data spread across disps rate systems. The other key dif ference is the primary use of this data store. At least unitially the data store is used primarily as a central data source for ap plications. It isn't used for enduser querying purposes.

TTING IT TO WORK

In a recent consulting engage ment, we helped a large law firm implement a consolidation warehouse. This organization has six major operational systerns that don't talk to one another

To connect each data source to every other would require as connections, or transformations. By establishing a consoli dation washeson that comparts to each data source, only six connections are needed.

The law firm saw its priorities clearly: first, get a handle on

incompatible data with a consolidation warehouse; then, in a second phase, work on giv ing end users access to the consolidation warehouse for

An example will illustrate the value of this law firm's con solidation warehouse. A new application, developed in Lotus Notes will track lawyers' nenfec

sional education requirements Prior to the consolidation warehouse, the data for Notes would be extracted from a SQI Server based human resources database, then restructured for the nonrelational Notes structure and stored in Notes.

takes significant effort to reformat relational data ioto the pr printury structure of Notes. Also the human resources and the Notes database would quickly get out of sync as changes were made to each, because there is no easy way to do updates. With consolidation water

houses, data is copied from its one in othe braman resources da tabase) into the common concolidation wavelouse database From there, via ao appropriate data transformation tool (in this case. Platroum Technology's InfoPump), the Notes database

can be updated and new records added on a regular basis The consolidation warehouse strategy can be much sampler to deploy than an enterprise data warehouse strategy You don't need to create up. gregations or roll ups, because

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MOOFBATING

You don't need to debate about whether to use a star schema or a denormalization approach. and you don't have to worry shout online analytical process ing (OLAPI/relational OLAP)

multidimensional databases That is problematic because it cuber and no on. from a design and implementation perspective, a consolidation warehouse is much less complex than a data watebouse

That will help you stretch the implementation dollar, perhaps enough tu embrace the whole enterprise or at least enough to address the key applications that need to share data (1)

Atre is president of Atre Associates Inc. a consulting company in Port Chester N. Y., which specializes in data warehousing and database technology. She can be reached at diaka@atrc.com

Storage

part in choosing the right disk system for a data warehouse Vendors are responding with more specialized disk arrays that target this booming market. with microcode optimized for vanous vendor databases For example, Hitachi Data

Systems Corp. in Santa Clara, Calif., recently rolled out the Nucleus Series, which specifically tarrets data warehouses The product is a bondle that

uncludes HDS's 5700 disk array. a special controller powered by a Digital Equipment Corp. Alpha chip and software optimized to move data requests back and forth quickly

The results of any of those arrays can be tempting HCIA, Inc. turned to Sun Microsystems, Inc.'s latest RSM aonn array, which targets high end Unix systems.

Because the array handles securrty right inside the box rather than from the database server, it frees up the server to handle more requests, and it speeds the return of data to users.

We have over \$T bytes of disk storage in our warehou spread over 10 servers. But people have really noticed that performance has improved with the RSM zonn," said Peter Wagner, director of systems and

networks at HCIA, a health care information provider in Bulti-

When Enterprise Marketing Services, Inc. expanded its data warehouse to more than innG bytes, it replaced a Compaq Computer Corp. disk system with a RAID 7 Storage Server, a fault-tolerant system from Storage Computer Corp. in Nashua

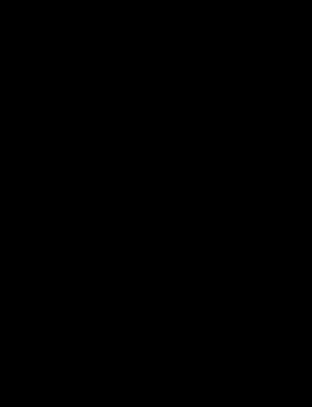
The firm was able to increase its data warehouse from anG bytes to 100G bytes and triple its I/O speeds - without a failure in the process. Since switching, we have never

FAILURE FREE

had a failure that could being the evstern down - our data has never been inaccessible," said Rich Horbaczewski, director of systems development at the Na perville, Ill., direct marketing firm. The data warehouse con tains massive direct marketing lists and telephone number data used by EMS's clients

Still faces should be ready to y a premium price \$500,nnn to \$1 million is to be expected. But the price may be worth the time and effort.

"Data warehouse expa will never slow down." Grim eaid. "And because we are pumping so much data through the data warehouse we need the disk system to be as fast as it can



Blue Cross

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You don't need to create aggregations or roll ups, because all applications require transaction level data

You don't need to debate about whether to use a star schema or a denormalization approach. and you don't have to worry about online analytical process ing (OLAP)/relational OLAP. multidimensional databases cubes and so on. From a design and implementation perspec-

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What Data Warehousing Experts Are Saying About Red Brick...

"Red Brick Warehouse 5.0 helps Red Brick solidify its lead among RDBMS vendors in the data warehouse space." Patricia Sephold Group "... Red Brick is the technology leader among the open systems data warehouse RDBMS vendors." Giga Information Group "We believe Red Brick is the best DSS/OLAP platform for real-time, random query access of larger data sets . . ." META Group

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"The reason we chose NCR is pretty simple. When you need to build a data warehouse that can grow to almost any size, only the NCR Teradata* database can handle the job."

It's no secret that the world's leading retailer uses-its vast amount of detailed data to gain a competitive edge. But even Wal-Mart's mammoth 7-terabyte NCR data warehouse (known within Wal-Mart as the "Knowledge Colony™") was approaching capacity due to all the captured and stored data from 65 weeks of sales in over 3,000 stores worldwide. So they called on NCR, the world leader in data warehousing, to prove that our data warehouse is, in fact, as scalable and manageable as we say it is.

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the IS labor shortage is a problem today? Just wait until the coming year 2000 legal crisis starts siphoning off your IS staff.

Information systems professionals will be routinely subpoenaed in the court cases brought against CEOs for negligence in handling the year 2000 issue.

DEAR CEO: WELCOME TO 2001: **SEE YOU** IN COURT!

CEOs won't be able to plead that they weren't informed of the issue; ignorance won't be a plausible defense. They will have to show that, once informed, they personally acted as leaders in a business crisis: that ey sanctioned the full, needed investment for the technical work, ordered an in-debusiness risk assessment (economic, safety, izational, supply chain, contract per-ince and the like) and put in place a contingency plan to handle any crisis creat-ed by the year 2000 fallout. The minutes of top management meetings and boards of directors meetings will be accutinized for nce of the attention they said and the

gress reports they routinely got. e court cases brought by shareholds mers, insurers, lenders and employ (who lose benefits payments for a few

Other IS pros will leave for the lucrative

new business of providing expert witness

testimony. Still others will be consultants to law firms and perhaps part of the CEO's de-

The cases will focus on the same que

tions that dominated the Watergate and Iran-Contra hearings: "What did the presi-

dent know and when did be know it?" But

the extra question for "Millenniumgate" will be. "And what did the president then do

months or their health care insurance), will be less about the damage from failures to fix the date problem than about accountability CEOs can argue in 2005 that it isn't their firms' fault if they couldn't meet contracted deliveries of parts because European or Japanese trading partners' systems crashed. But that excuse won't wash. The lawyers will be asking, "Did you show due diligence in risk assessment, contingency planning,

monitoring and investment?

My estimate is that about 10% of CEOs will be able to show that they met the business responsibility here in the U.S. But in Europe, the figures are dreadful. More than 90% of the CEOs I work with there find the entire millennium issue irrelevant. They don't know much except that it's big, they don't know what their CIOs are doing about it, and they're all still looking for ways to cut IS mets

Computing Japon reported in its June is sue that very few executives there are knowledgeable about the year 2000 problem. Only an estimated 30% of Japanese pro-grammers have the skills needed to deal with old Cobol code, much of which includes English terms. Just about every large U.S. firm does business with European and

Japanese companies. How they handle the year 2000 problem is now part of your own company's business risk profile.

Year 2000 isn't a computer pro more. It isn't a company, industry or U.S. problem either - it's a global interdepen leucy problem. Even if an individual com pany manages to locate, change and test all the needed fixes in its system, it will be affected by other firms that haven't done so That's an inevitability — the consequences may be trivial or massive, but it's the job of the CEO to mobilize to prevent the crisis from becoming a di

IS has to get that across to senior busi-nesspeople. The lawyers are ready and wait-ing. A lawyer recently told me that the profession is salivating at the forthcoming opportunities and that, already, insurance firms are refusing to issue liability insur ance that covers outside directors against year 2000-related lawsuits. That lawyer's esnate of the total year 2000 liability is at least \$x trill

Perhaps the next new job title is going to be CLO - chief litigation officer. O

Keen can be consucted at trono peterkeen.co His new book, The Process Edge: Creating Value Where it County, was published in to by Harvard Business School Press.

When less is better



The bugs in Deriver International Airpout's buggagehanding system cost the Mile High City a cool million a day. But you don't have to blow it big for poor software quality to cost you a fortune. Your company is probably losing business and wasting time and money on avoidable rework and help clerk calls. And Is is as much to blame as any wedder.

And yet many companies are putting quality on the back burner. "If speed is what matters most," the thinking goes, "a few bugs are better than slow-footed processes."

Your company depends on IT to stay in business. Can you afford that kind of thinking?

That's where our Special Report begins:

- Overview: Poor quality is costing you plenty. We look into the real costs of software quality and show how quality more than pays for itself. Page 78.
- Sound off: Two experts tackle an uncomfortable question: Is the quality we're getting from software vendors good enough? Page 82.

■ Resources: Web sites, events and books for the qualityminded. Page 87.

- Cureers: Quality professionals make up only 3% to 5% of the software jobs in the U.S., yet there's evidence that demand is surging. Follows Resources.
- All this and our savory blend of buzzsaw statistics,
 mind-tickling quotations and why software
 is like an exploding shoe.









Overview

Poor-quality software costs a bundle in money. lost opportunities and irritation, but it costs less to fix than you think

By Miryam Williamson

Faulty baggage-handling software delayed the air- ductivity Research, Inc. in Burlington, Mass. port's opening 16 months, from October 1993 to February 1995. Newspaper accounts at the time told of closer to home. There was a barrage of telephone "bags [that were] literally chewed up," and "clothing and other personal belongings flying through the know, "What am I going to tell these people?" The air." The delay cost airlines and the city of Denver \$1 software bug cost his former employer \$300,000.

T WAS THE BUG That Ate Denver International Air- million dollars per day, not including litigation, according to Capers Iones, chairman of Software Pro-

For Tony Bilotti, the problem of software quality hit calls to the help desk. Branch managers demanded to

facts & stats

"We were out of business for a day. The 2,000 independent agents who used Continental Insurance Co's policy-writing system couldn't quote on our policies. A lot of new business we could have had went somewhere else," says Bilotti, now associate director of quality assurance at Phillips-Van Heusen Corp. in Bridgewater.

N.I Perhaps your company hasn't experienced a disaster such as this, but the bite poor software quality takes from your bottom line is nothing to sneeze at. According to Jones, nearly half the money a typical company spends on software development pays people to clean up after themselves or one another, and that's a nice chunk of change that could be better spent elsewhere.

That kind of waste might make executiv think of jumping out of their corner-office windows - if they knew about it. But corporate executives have no idea what's going on in soft ware development, and information technology executives know little more. "Even the iquality assurance| people don't know very much," Jones says. in a June study for Meta Group, Inc. in Stamford, Conn., Howard Rubin, professor and chairman of the department of computer science at Hunter College of the City University of New York, surveyed 873 companies in industries ranging from aerospace, financial services and discrete and process manufacturing to software producers, telecommunications and utilities. Alough most had undergone some assessment of their software processes, more than two-thirds had no formal processes, and fewer than one in five kept any data on software quality.

POCUSING ON COSTS Technology leaders can exert real bottom-line impact by focusing on cutting costs that result

from poor-quality software, experts say. The first step is to assess those costs, says Richard Cox, project leader for quality assurance and production support at Air Canada in Mon-"You've got to count software defects, mea sure the impact of those defects and figure the cost and time required to fix them," he says.

But the impact of software errors goes far beyond the cost of rework. Loss of revenue, missed market opportunities, incorrectly processed or-dees and billing errors all drain money from the siness. Then there's the cost of customer dissatisfaction, intangible but real, to be accounted



deak. "The more you push out to internal customers products that aren't completely reliable, the more likely it is that the help desk will be swamped," says Lawrence H. Putnám Sr., president of Quantitative Software Management, Inc.

With quality in its current state, the average oftware company needs "at least one live help desk person for every 100 customers for each application package," Jones says. That num may be smaller for information systems organi-

zations that serve internal customers. And of course, not every call to technical support is trig-gered by a software fault, but help desk logs should easily pinpoint the proportion that are. If that number was significantly reduced, then some of the technical staff could move on to revenue producing work. And the people rrently seeking help wouldn't be tied up waiting for a solution more savings in time and

As important as measuring software quality is, many man tute a measurement program. To Cox, that's a nonissue. "This isn't rocket science," he says When he came to Air Canada

the IT staff was tracking software problems on a Quattro Pro spreadsheet. "That's ridiculous, Cox says. "There was no way I could give any kind of visibility to ment without spending doing statistics on a spreadsheet." Cax gave the job of veloping a dBase III defect tracking application to a new hire just out of high school "who loved to play with the PC" What

had taken half a workday to moni-And consider the cost of maintaining a help tor could then be done in an hour.

Cox found that half of all software errors showed up during acceptance testing or production, so he souped up testing earlier in the development cess. The cost was negligible, but he benefits were readily di Gratified management increased the quality assurance staff from one to uz, and Cox was in charge.

Concern for software extend beyond the quality at staff. Educating IT professionals in the impor tance of quality costs nothing and can quickly yield beneficial results. At Philips-Van Heusen, whose product lines include Van Heusen and Izod shirts and Bass shoes, Bilotti draws an analony between a defect in a product that renders it salable and a defect in software, which also tensely affects the business. He suggests cal-

culating how many units of a product or service Quality pays, page 81

os for software quality

re facts & state, page \$1



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When traffic's high, you're essensially shut down. That's because people can't access your site. But there's hope—move your Nets servers to the world's first insernet. Data Centers. With a huge surplus of analability, we manage more clients' servers with more expendable bandwidth than anyone. 7 days a week, 24 hours a day 50 quit losing his, call in tool free at 1-889. Ziboodus, Dept. CPW1, for a fee bandwidth analysis. Or with us at www.execodus.nets/cows/life or a virual tour.



Quality pays

Must be sold to cover the cost of rework

on a software error and publicizing the figure among the development staff. "Once you show people statestics and provide ways to improve software quality, people gravitate to those things and do them. You don't have to hold a gan to their heads. People don't come to work to do a bad job. They want to become more professional and develop better soft.

ware," Bilotti says.

It's true that there are tools that can help improve software quality. At most. Putnam says, a company might choose to

increase its dévelopment spending by 10% or 15% to acquire such tools and train people to use them, but the savings in rework and other error-associated costs would soon make up for that increase. "Ex not a matter of huge inven-

ments. It's a matter of careful planning and disciplined feedback." he says. Improving software quality surt something that happens once and it's done. Nor is it a matter of making one change in the development process and thinking the quality problem is solved. "It's like getting into good physical shape." Bilott says. "You don't just exercise once and

forget about it. It's a continuous process.
You make it a way of life."
Williamson (murilliamson@reporters.net) is a technical journalist in Warwick, Mass.

Inspect before you program

Quality control smax the most messay when it's done at the start of the software development process.

It shouldn't surprise you that errors cought early in the software development

In the 19th book Sigiliarus Economics Princises Princises and 19th of the fact that takes one hour to correct when system requirements one being differed will raise at least two house If not discovered well the system is in production. That's a strong agreement for placing quality improvement emphasis on the front.

An enthusiastic precitioner of this principle to Gregory T. Duich, serior and engineer at the Software Technology Support Center at Hill Air Pores Bana Link, which denotes a effects for national search; and venezing protests.

Little, which develops collected for national society and weapons systems alch and life town put requirements decments (which list the requirements for

each system to be developed) under a high-powered reicreacupe before the eigenra get into the act.

As the first step in a document trapecties, the team leader gives the work a quick enco-over. If more then a few encoore found, the document goes back to the

are found, the document goes back to the author — soughly technical uriters — to be reserved.

eales are exhipted to more thorough scruting. Each requirement must be sepserted by a source document that explains the problem to be a

included.

The hardware platform and test confromment must be specified at the requirements phase. Documents produced at each stage must refer applicitly to these

from the previous con.

When the their corner for programming, developers can be confident that or

ject decorments are necessard to be perfect, Daich cays.

"After on remove the defects on one find, on extinuit how many remains

"After on remove the defects on one find, on extinuit how many remains

"After on remove the defects on the control has been a find the remains of the

day's software, no one expects absolute parfection.

Daich says inspections proceed at "normaulters around one page

checking with the source documents, rules and standards that we are trying to follow:

opment. But the earlings are greater than that. "You don't have reach sweet time, and testing these can easily be cut in helf. You can see bonefit right every." he sees.

be suys.

And to those who say they're too find up in year 2000 conversions to address
the quality leave now, Dalch has a ready response: "That's ridiculous. You don't

Box full o' bugs

No metter the price, poor-quality commercial software is no bargain.

Commercial software vendors last year fielded 500 million calls for lactuage support, says Com Kaner, author of Finling Computer Seftware (Thomson Pro and a frequent species no software quality and customer calefaction.

adar no collesso quality and custoner estimation.

of about Say per call, the industry spent about Sq.6 billion or

of which were because of bugs, says Karer, who gathered of

tistics on poor quality in shrink-wrapped soft

uses for a forthcoming back, that if
the weather aren't the only were
poor quality. At the other and of its
a meant cannot be consequed a comtaget from productive such for no or
mostly so enhances per cell. "These
bags in mosto-mortal anthrone back

longs in mone-restrict software because his or wal precision in the software industry to invesceme longs serimed, "Excess rays, I-de questic james thick, notion of The Challengs of "Good Ecough" Sylvanes (Software Not Lebels, 1996), angles, "I was warring of Apple when Michalands and Tystum 7,0 shipped ... with themselved.

bega." And author followed Numerics, in the book, that and Americantists of the American Propagation Protection belong, without "district proceedings of the following as that Microsoft Windows 3.5 was adopted in 1933; with a reason 5 years to have the land has been developed that the contraction of the contraction o

facts & stats

"Testing can only indicate the presence of lugs, not their electric." — Ediger Diffstre, University of Tests at Austin

A majority of respondents admitted the their organizations have improvingly dripped software with large. Source: The 1996 ConterLine survey "bilicresoft programs are generally beg free ... 99,9% for calls to the Micro soft bot line) two east to be user mintailes." — All Cates in Focus, a German rangeshe

"The most Blody way for the world to be

dead, I had a United the Control of the Control occicomputer professionals. We cause accidents." — Nathanial Berevatoin, chief soi antist, First Virtual Payment System

ready injured or billed by uneaffe of trailons of realistion from the Thoras medical linear accelerator. Software face errors were blamed.

General Meters Corp. Inst July had to recall nearly yea, one care because of a



More Rects & statu, page

Sound Off: Should we give up on

Today, speed is everything: IS will gladly trade a few bugs for fast releases

By Steve Devinney

O THE TOPIC IS quality. track record. According to study by The Standish

Group, 52% of all projects undertaken by internal IS organizations cost 180% of their original estimates; projects completed have 42% of the originally proposed features or functions; 81% of all projects are canceled before completion; and only 16% of projects are completed on time and within

That isn't a difficult record for software vendors to beat. Vendor packages may be the only hope the U.S. has of maintaining a strong position in today's competitive marketplace. (I'm not implying that all IS departments are incapable of producing qual-

ity software, just pointing out that IS faces problems that make vendor packages even Why is vendor software more attractive in today's competitive

To begin with, quality isn't as bad as everybody says. Vendors subject their products to beta testing. That gives hundreds, or

even thousands, of people the opportunity to identify defects and gives the vendor time to remedy critical defects prior to a formal product introduction. Corporate America can't subject homegrown applications to that level of scrutiny.

Let's face it: Vendors focus primarily on the critical business functions their products were designed to support. Hence, their products' defects may be more of a nuisance than a serious roadblock. That isn't an excuse for poor interfaces or nonintuitive design, but at the end of the day, the important thing is to get your job done.

rate IS have come to expect and accept defective products. "So we missed a deadline and our application is defective. The users signed off, and we still have a job. Life couldn't get any better." Vendors bet their company on every introduction or major enhancement. One catastrophic deployment may well be the last. How lone will a wendor stay in business if it delivers

Corporate America and corpo only 42% of the promised func-

facts & stats

ies in North America and



quality vendor-supplied software?



IS has settled for defective software long enough. It's time to hold vendors' feet to the fire

By John W. Horch

I'S HICE TO HAVE the latest features in your soft ware, but it's time IS deaded the greatest as well. We don't give up when we're not satisfa

with other products. Why should we give up on soft

ng toward the median of zity. We're becoming tolerant of "good enough," of "al-most right." After all, most air-planes don't crash. Most bungee eds don't break. Most of my roof doesn't leak. And hey, most of the time my software runs. Thus was born good-enoug

It's fine to get the latest ver-sion of a slick electronic-mail program, but when it crashes ur system every third or rth time you use it, time is est, and stress builds. Does it matter that your word processor can place 15 fonts on one page m it can't reliably reposit ble? How many two-m ruptions from crashes or s, how many 10-minute ek-arounds and how much gravation will it take to per-

ware package?

I sent back the latest upp to my E-mail provider and went back to a better, previous version. It does what I need, not hat the vendor wants to sell.

Twenty-five years ago, the U.S. automobile industry got a wake-up call when Toer wake-up call - this time for software vendors that think

overpriced, overvalued and unrperforming offerings. It's time to quit settling for what we used to call the IBM answer: "I know what you want, but this is what you get."

Are you really willing to spend time rebooting because of a system error? Do you really not mind the extra connection charges that accrue while you try to get the modem off-line and neset? Is it OK to lose 10 inutes of work because a conflict between two applications causes a crash? Is it acceptable to risk a nuclear incident because of mishandled alarms



re facts & state, page 84

Yes!



Consumers have demonstrated that speed of delivery and cost are far more important than defect-free products

Is vendor software defect-free? Of course not, Why? Vendors are especially sensitive to time-to-market demands. The competition is plentiful, and new players join the game every

Look at the evolution of year 2000 technology solutions. Three years ago, there were a few vendors that offered technology assistance. Today, everybody who can spell year 2000 has some form of automated solution. Speed of delivery is critical to vendors, and it may ultimately be the deciding survival factor. Vendors can't simply focus on the current market needs; they must stay abreast of new technologies and sition themselves to be the leaders

of innovation Consumers have repeatedly demon-strated that speed of delivery and cost are far more important than defect free products. We continue to bur their products, services and maintenance stracts. There was a period when we expected vendor software to exceed the quality of the products IS could produce Now we tell vendors we will tolerate defects as long as their software meets the critical needs of our core business functions. In effect, we have lowered the prod uct quality standards for the vendor.

So whom do we blame for defective software? Vendors will react to the demands and expectations of the and will continue to deliver defective products until we rause our quality expectations and refuse to buy defective products. Today, you buy a prod-

uct knowing it has defects but with nome assurance that a fix is forthcoming via a World Wide Web-enabled file transfer or a new release. You're happy. The vendor's happy. Of course, there are exceptions Microsoft has such a stranglehold on the desktop market that it can force mers to accept defective prod-

Vendor software will always be an attractive solution for most organizations. New and advanced technologies. the global marketplace and the dwindling availability of technical resources will continue to fuel the need. What

you give up in quality you'll get back in nience and frequent releases. Me. I'll take the a \install any day. O

Devinney is managing director of the Quality Assurance Institute in Orlando Fla. He can be reached at 76435-4480

Nο

CONTINUED FROM PAGE B3 Can your shop overlook a one-year schedule slip because the software wasn't as represented? After three months of trying to use an upgraded version of one of the

most popular word processors, one of my clients, a software devel oper with soo employees, returned 200 site licenses and reverted to the previous version. (When I am required to submit my reports in that particular word processor, I add 25% to my fees.) Another client. a major electric-power company, removed a

vendor because of

flawed software that caused a near-failure at a nuclear power generator. Still another client, a metropolitan railway system, dropped a vendor after the vendor's software - presumably a cus tomizable off-the-shelf package - had to be completely redesigned to meet the needs of my client. The vendors beard

those complaints! You don't do sloppy work. Your time is as valuable as anyone else's. Your right to get value for money is legitimate. Have corporate IS organiza lost the self-esteem that once told us we were worthy of goods that worked, lasted or were safe) Are we so resigned to good enough that we've lost the heart to demand better than expected?

One thing you can do is determine what you actually need in a vensupplied software product. Shop around. Few needs are so imp that you must run out and buy the first thing you see. If you shop around, you'll find that there's more than one source for nearly everything.

Sure, there are a few giant vend out there, but few of them are the only vendor of a particular software product.



Has IS lost the self-esteem that once told us we were worthy of goods that worked?

Which package does what you need? Forget the bells and whistles, Stop buying software just for the sake of having the newest or biggest. If you don't need the added capabilities, don't pay for them. If you aren't satisfied with what you do buy, send it back, and don't use that vendor again.

To settle for good enough is to sink to the bottom. I don't want to, and I don't think we have to. We've settled long enough ()

Horch has spent more than 30 years in the field of software quality assessment and assurance. Currently a consultant, Horch speaks at international conferen soria and workshops. He has pubthed numerous papers on software qua ty management topics, referred submittee papers for conferences and journals and reviewed books for several technical ma ines. He wrote a book on software qu nd Practical Guide to Software Qu at Month is a senior w ber of the IEEE and of the ASOC and a

member of the Quality Assurance Insti-tute, as well as other professional organ

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A PROBLEM IF YOU DON'T SEE IT COMING



!Candle

Resources

Web sites and conferences more

Getting quality help on software issues

By Amy Malloy

you crave more information about how to improve the quality of your software, you aren't alone. Here are some World

Wide Web sites, conferences, seminars, books and articles to get you up to speed or keep you current on software quality.

Software Research Institute, In

uww.testworks.com/Institute/HotList
This comprehensive Web site provides
links to nearly all the other sites messtioned in this resource guide. The site
doesn't contain any original content, but
that isn't its purpose. It supplies links to
sites on many aspects of software quality
in the U.S. and elsewhere.



Software Quality Institute www.utexes.edu/coc/sqi

A partnership-between the University of Tensa at Austin and various software Tensa at Austin and various software Tensa at Austin and various software (Tensa, the Software Quality Institute (SQI) is a nomprofit organization for on educating advisory producers and users. The site includes an online newtlett with archive adding to early last your, a description of local quality semniars and lains to software employment. Web sites and SQI oponsored organizations.

Technical Council on Software

Engineering www.tcsc.org

a nough sparse on activate quantispecific information, The IEEE Computer Society's Technical Council on Software Engineering site provides protects to to the council's activities and contacts. In formation on related conferences and a membership enrollment form top the site's offerings.

Ed Yourdon's Web Site www.yourdon.com/index.htm

guru and consultant, posts information about his books, articles and seminars at this site. You'll also find his electronicmail address and fax and triephone num bers. This is a good one-stop shop for all of Yourdon's insight into software quality, if you don't mind maneuvering

Software Quality Group

Housed by the National Institute of Standards and Technology (NIST), this site details the group's activities, which include developing tools and methods to improve nothware quality. The site contains a list of relevant publications on the topic, but the most recent mention dates to last year. The site is easy to awayste and provides links to the NIST home page and other drivisions.



Software Productivity Research

This consultancy derives much of its reputation from Capers Jones, company founder and software quality expert. The

site lays out the company's consulting and training services. Trade show info mation is also available here.

American Society for Quality
www.ngt.org
Not geared solely toward software quality,
the American Society for Quality explores
the issue of product quality on a large
scale. The society describes itself as having "products, services, and — most of all

ing "products, services, and — most of a information to belp people in all walk of life grapple with perplexing issues like total quality management, benchmarking, productivity and more." This clearly laid-out site contains quality definitions, conference and educational information standards and certifications.

books

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conferences

In Brussels Nov. 4-7; in San Francisco next May. Contact: Margaret Kinney, marketing manager, the Software Research Institute, San Francisco, Calif. (415) 957-1441; E-mail: qw@soft.com;

Web address: www.soft.com.

Fifth European Conference on Software Testing Analysis and Review, Edinburgh, Nov. 24-28. Phone: (44) 178 44 64 106

Eighth International Conference on Applications of Software Measureme Atlanta, Oct. 27-30. Contact: Software Quality Engineering, Jacksonville, Fla (904) a68-8639; Web address: www.

chnology Quality Conference Clarion Hotel, Orlando, Fla., April 13-17-

Contact: Quality Assurance Institute, Orlando, Fla. (407) 363-1111

The Eighth International Symposius on Software Reliability Engineering The Sheraton Old Town Inn, Albuqu

que, N.M., Nov a-5. Contact: The IEEE Computer Society's Technical Council on Software Engineering, Washington, D.C. Web address: http://sdmin. ONE;ONE.com/issregr

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Practical Software Quality Technique Minneapolis, Oct. 7-8. Contact: Software Productivity Research, Burlington, Mass. Web address: www.spr.com/html/ trade_shows.htm

on Software Maintenance '97 Bari, Italy, Sept. 29-Oct. 3. Web address unnu.cis.ohio-state.edu/"harrold/lcsmg7/

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Career opportunities

Charged with cleaning up the sins and shortcomings of software developers, quality assurance professionals suddenly are a very hot property. In the process, they may also finally get some respect

BUG

By Natalie Engler

hen developer Tony Bilotti was promoted to software quality assurance specialist at Continental Insurance Co., he thought it was a punishment.

"I didn't understand what quality assurance was," Bilotti says now, after 10 years in the field. Among developers, "the association with [quality assurance specialists] is that they don't produce anything. Because they don't."

Welcome to the most underappreciated and misunderstood career in information technology: software quality. It's also arguably one of the most important.

Put simply, software quality assurance and testing professionals make software better. Quality assurance people prevent defects, and testers discover bugs and oversights before they reach the customer. (For

breaking in

There are several reades into software quality. Some people start at a large technologiintensive company such as Luccest Rachinologies, inc., Meterois or Microsoft Corp., all of which have well developed curvicula. Others join testing teams within results ender concerns. The following are stories of three people who fell into — and in love with —.

ACKIE BURLESON

Test manager in treasury product support Global Finance Division, NationsBank When Jackie Burleson received her MBA from the University of North Carolina at Greensboro in 1988, she went straight in-



choice, perhaps, but she didn't find the adrensline rush she ha hoped for. Unsure where to

n,a magazine of the top 20 careers for vormen, but "nothing grabbed me," she says. Then she turned the page and distovered a blurb about software develop

ment. "It sounded interesting," she say But without a technical background, Burleson wasn't sure where she'd fit in. found a few companies that were creating test centers. One of them was Network Computing Corp., a company that developed software for county and small city governments. It gave Burleson the break

Starting out in a small company had its diventages. Burleson says she "got to se he system from the beginning to end." the would test each product, learn the inind outs of it, then go to customer sites and provide training.

Later, she and two co-workers left to start a test center at NationsBank, whice was implementing a large World Wide

more detailed descriptions, see story, page 92.) Today, as director of quality assurance in the informa tion systems group at Phillips-Van Heusen Corp. in

New York, Bilotti says he knows he's anything but deadweight. He redefined the \$1.5 billion apparel company's. processes for software development, maintenance and change management, and implemented testing standards. Now he leads the team charged with solving the year 2000 code conversion problem.

Despite the importance of software quality profesionals such as Bilotti, they're often treated as pariahs, says Howard Rubin, chairman of the department of computer science at Hunter College in New York and president of Howard Rubin Associates, Inc. in Pound

Ridge, N.Y. "Compani ies don't appreciate and leverage the value of these folks," Rubin says. A whopping 86% of the quality assurance professionals who responded to a re-cent Quality Assurance Institute (QAI) survey agreed that their function "is not clearly understood through-

out the organization Software quality professionals make up only 3% to 5% of the software jobs in the U.S. (vs. 10% to 12% in Eu-rope and Asia). Managers send them to conferences to get them out of their hair, and programmers regard them as the enemy. They routinely find fault with developens' work. Steve Devinney, managing director of the QAI, in Orlando, Fla., says it's easy to take that as an at-

As Jackie Burleson puts it, "You are basically telling ne their baby is ugly. Sometimes that doesn't go over well." Burleson is a test manager at NationsBank Corp., a Charlotte, N.C.-based banking company with \$240 billion in assets.

Still, their status as the "professional homeless" notstanding, "opportunities for software quality professionals will be emerging in this country' soon, Rubin says. Thanks to the spread of standards, the U.S. economy's software dependence and the year 2000 cor sion problem, more and more companies are focusing on quality.

"All the pressures are there," Rubin says. And it seems that, finally, the software quality profession may be recognized as a profession.

A SURGE IN DEMAND

One organization that doesn't see things that way is the Bureau of Labor Statistics, which doesn't include soft ware quality jobs in its occupational employment statis-tics. People's tendency to hump together maintenance and enhancement makes it even tougher to track the rise of software quality professionals, says Capers Jones, founder and chairman of Software Productivity Research. Inc. and author of nearly a dozen books on soft ware development.

But substantial anecdotal evidence indicates that de-mand is surging. Software quality veterans say they re-ceive several calls each week from headhunters and firms looking for software quality people. Some classi-fied ads carry more and more quality-related listings. And at a recent QAI conference, the bulletin board

was covered with job postings, Burleson says. There's might be looking for a job, "three or four people handed her their business cards before she could finish the sen-

tence," Burieson says. Asked if their organization had at least one quality as-seance group, 81% of the conference participants said

it did, vs. only 63% the previous year. The job requirements also are multiplying. Today many testing specialists are trained in defect estimation. measurement, inspection and testing methods. More than half of the respondents to the QAI survey said they held one or more professional, certifications, almost a

10% increase over last year's results. Quality assurance professionals need to know stan- Engler is a freelence writer in Cambridge, Mess. ______

dards such as ISO9000-y, the Software Engineering In-stitute's Capability Maturity Model for Software (a de facto estandard for assessing and improving software processes); processes established by companies such as orola, Inc., AT&T Corp. and Bell Laboratories; and military standards of software development, says Alka Jarvis, manager of quality systems at Cisco Systems, Inc. in Son Jose, Calif. Software quality has evolved so much, she says, it now includes continuous improve ment and the plan-do-check-act cycle developed by W. Edwards Deming, the father of total quality manage

For every dollar that U.S. corporations spend on IT. 30 cents goes down the drain because of quality issues (rework, rewrite and systems that don't work). Rubin says. As a result, "quality has become the low-hanging fruit for IT investments."

fruit for IT investments.

The challenge for employers and newcomers is that few U.S. universities include software quality assurance or testing as part of their computer science programs. Only two organizations offer certification: the QAI and the American Society for Quality (see Resources, page 20). Boodle solving for testings seemabling are transfering. 9a). People looking for testing specialists are struggling. "There's a huge gap," Burleson says. "No one really has that background."

In response, companies such as NationsBank are beefing up college recruiting efforts and creating in-house classes. Some are even offering better compensa-tion. According to Jarvis, quality analysts with seven ers of experience average between \$60,000 and 120,000 per year. Although entering the field may be easier, and the

rewards may be greater, one sad fact remains: "The biggest challenge for these follor," Rubin says, "is to get their companies to invest the time to get the job done right."



oment on, Jarvis mad

Software quality: It's up to developers, too

WHAT DOES A SOFTWARE QUALITY PROFESSIONAL DO. ANYWAY?

Common questions and answers col lected from software quality experts:

SOFTWARETESTING O. What are the job titles?

A. Testing specialist, director of software testing, test manager, oc casionally quality assurance specialist and more recently, year 2000 specialist and International Standards Organization (ISO)

Q. Who are they and what do

ey do? A. Testers are product oriented: they are concerned with eliminating defects. They focus on busi ness requirements and the ability to understand those requirements, and they develop test sce narios that ensure that those requirements are met. In some mounies, testers are responsi ble for defining a process to manage defects. Their tasks include test-plan generation, doing inspections and walk throughs,

picking tools, designing process-

es, collecting metrics and doing

benchmark calibration.

Q. What skills do they need? A. Training in defect estimation measurement, inspections and testing methods. They also need good planning abilities, good communication skills, the ability to analyze results and compare them with expectations, and loads Start

Q. Where do they come from? A. User, business analyst or IS ranks.

O. What's the career outle A. Thanks to the year 2000 con-______

version problem, the future looks bright for testing professionals, says Steve Devinney, managing director of the Quality Assurance institute.

> QUALITY ASSURANCE Q. What are the job titles? A. Quality assurance specialist, vice president of software quality

assurance and director of software quality assurance. Q. Who are they and what do

they do? A. Quality assurance jobs are

process-oriented. Quality assur ance professionals focus on preventing defects. They develop the procedures a company follows to develop and maintain software, predict the number of bugs and predict the effects of development methods on quality. They also explain quality's bottom-line impact

O. What skills do they have A. Depending on the level. requirements may include knowl

edge of software processes. measurement, inspections, me ods and standards such as SPICE ernational collaborative of fort to develop a standard in the area of software process assessment), bootstrap, Europe Strategic Programme of Research into Information Technology (ESPRIT), ISO9000-3, the Capa-bility Maturity Module, military standards, and software process standards established by comp

nies such as Motorola, AT&T and Professionals also need good ommunications and business

stells and tact.

A. The IS ranks. Often they start as

Q. What's the career outlooki A. The future looks promising. says Howard Rubin, chairman of the department of compute science at Hunter College, because year aodo projects need staffers, and businesspeople who are growing accustomed to the quality of packaged software expect more from in-house

applications.

CAREER RESOURCES serican Society for Quality (Offers exam for ce quality engineer) Milwailen Wis (800) 248-1946 warm.esqc.org

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SR/Institute's Software Quality HotList: Links to organizations and institutions that support the software quality area. www.testworks.com/Institute/ HotList/

Software QA magazine Ridgetop Publishing Ltd. Molalla, Ore. \$60 for six issues per year editor@ridgetop.com

Information on standards such as the Software Engineering Insti-tute's Capability Maturity Model, ESPRIT and SPICE http://fip.ori.com.edu

nce professional certificate m at De Anza College in Cupi arvis also became a certification boa mber for the QAI and an advisory and member for the certificate progra continuous improvement and quality

Not one to take the dearth of res

When Boland received her backelor's de gree in MIS in 1986, no one talked about testing as a career option. She didn't en-ter the field until after she had been a de-veloper at the Alexandria, Va.-based comreoper at the Australians, Vs. bases on mercial software company for more th night years. The firm formed an indepen-sent testing group and asked her to po Boland says she likes testing becaus the enjoys "things that are definite and

She says there's no such thing as ct software, but "If we do a good jo



ng role to a quality wrance role so she loesn't become Boland says she's saming "a lot more

esser then as a developer working on a egle product. "Now, the slor's the limit



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PACIFIC NORTHWEST no longer defines itself by its rainy weather, logging industry or grunge scene. Although it remains a hip place for the young crowd and still relies oo its natural resources, the area is taking on a high-tech image as it ward the aust century.

ustline would best sum up the area. There's a youth and en ergy to this part of the country. Walking through the streets of eattle, one sees diverse lifestyles, rich culture and booming usiness - all in spite of the rain.

The software industry here is on fire. Inspired by Microsoft Corp., start-ups have moved to the area in droves. Everything in this region seems to be in Microsoft's shadow, says Wayne Deckman, network administrator at Fred Hutchinson Cancer Research Center. Even the Seattle Seahawks are tied to Micro soft, Deckman says, referring to Microsoft co-founder Paul AlPortland, Ore., is treming with

semiconductor plants, which means moving to this part of the country isn't risky for information systems professionals. Employers are looking for anything and everything when it comes to technology professionals and skills, says Angel Cortez, a se-

nior systems analyst at Nordstrom, Inc. in Seattle. If all this talk of hustle and bustle has your bead spinning images of Spokane, Wash., might slow things down for you. Conservative, less heetic, no traffic, rural atmosphere, quality employers - that's how Lonnie Crone, vice president of IS at Medical Services Corp. in Spokane, describes the city.

In all three cities, there should be a tob to much your skill

And if a job alone isn't incentive enough to move, native Pacific Northwesterners suggest coming for the mountains, the wat the culture, the food, the beautiful surroundings and the coffee

By Amy Malloy

Seattle: MARKET SUMMARY You name the skill; Seattle needs it. IS

essionals with skills ranging from Java to Cobol can find homes at more companies than just Microsoft or The Boeing Co. All industries need talented IS help. Some of the top employers are Microsoft, Boeing, Weyerhauser Co., Price Costco,

rom, Inc. and Safeco Corp. Software engineers with C++ and Visual Basic knowledge, World Wide Web developers, and midlevel professionals skilled in Java, Oracle, SQL Server, Unix and Cobol are in demand

There are more jobs than qualified eople. Airborne Express has openings for application developers, client/server operating systems experts and database analysts, according to John Kirchgessner, director of IS recruiting

On the mainframe side, the year 2000 ish has created a high demand for Cool programmers. But remove the year 2000 conversion problem from the picture, and client/server skills drive the market, says Sylvia Soliz, network manger of the department of administration for the city of Seattle.

Portland: MARKET SUMMARY Portland's catchy nickname, the Silicon

Forest, says it all. According to the Portland Development Comm oumber of IS jobs in the vendor commuouty increased from 11,000 in 1988 to C7.400 Major private-sector employers include Intel Corp., Fred Meyer, Inc., Providence Health System and Kaises Permanente Health Plan, Inc. Although Portland is a large semicon-

ductor and software industry market, Portland employers in all industries need IS professionals skilled in client/ser areas. Windows programming and soft ware engineering demands outweigh the demand for mainframe skills.



Spokane: WARKET SUMMARY

The IS market fluctuates, but finding a job generally isn't a problem. Spokane Intercollepiate Research giate Research and To Institute, an alliance of business, indus try, education and government, works to give the region a competitive edge in vari-ous information-based and technological industries. The city is home to many health care organizations and is the larg est health care area between Seattle and Minnespolis. Top employers in the area include Kaiser Aluminum & Chemical Corp., Key Tronic Corp., Guardian Life Insurance Co. and Hewlett-Packard Co. Jobs aren't as readily available as in Seattle or Portland, but they exist. There's been a general move toward client/server in recent years, which Bill Donner, super visor of planning and technology at Washington Water Power Co., attributes to the fact that a lot of mainframe shops have left town. There's a need for prof

sionals with desktop, client/server. Unix and Windows NT skills.

Melloy is Computerworld's associate edi-tor. Buver's Guide.

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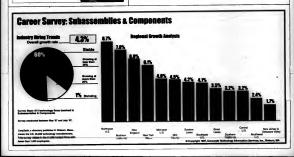


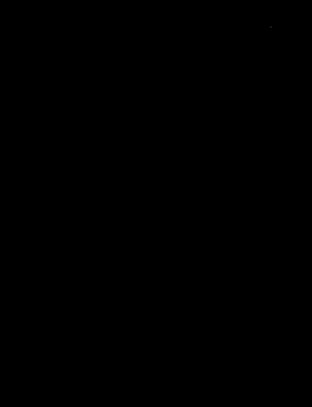
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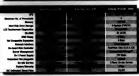
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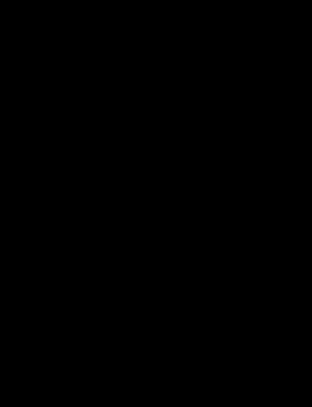
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A few times each week, we also have Links listings. These are resources related to online and/ or onnt stores. We also have polls and focures that you must resisted for to access. The rest of the site is accessible without registering. Contact: Johanna Arribrosso, Online Editor, (508) Bao-8553 or Johanna, ambrosso@cw.com

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Mega-warehouse as marketing tool

The project, which started in HFS's marketing department was formally launched about 18 months ago and is expected to

wrap up pest month. The objective is to use the consolidated information in new, highly targeted cross-brand promotions aimed at increasing the market share of each HFS

By using the warehouse to provide a single view of custom ers and their buying preferences across all brands, the company theoretically should be able to target customers with promotional offers tailored to their specific profiles. For example, regular Avis renters could get special discounts at HFS hotels or time-share purchasers could get special rates on Avis rentals.

REWARDING LOYALTY "The idea is to reward our cus tomers for their loyalty and bring to the table additional offers at the right tiose and the right place," said Scott Anderson, vice president and chief marketing officer at HFS. "We think it is going to be a signifi-

cant value-add to our business. If HFS can pull it off, the company will have succeeded in doing what corporations every where are struggling to do: find a way to harness and shape vast

nounts of widely dispersed enterprise data into a powerful business and marketing tool Such capabilities will be cru cial for HFS, particularly in light of its recent acquisition by Stamford, Conn.-based direct marketing giant CUC Interna tional, Inc. One of the goals of

that deal is for the companies to cross-market to one another's customers [CW, June 9]. No decision has been mad on if and how CUC systems will be merged with the unified HFS warehouse, Anderson said Qualitatively, it is no differ ent from what happens when

two different companies merge with each other," said Ken Rudin, a nartner at Emergent Corp., a consultancy and integrator in San Mateo, Calif. You have two sets of data with entirely different personalities that you somehow [have] to merge with each other," he said. But in

Intel card wakes up sleeping PCs for remote maintenance

By Bob Wallace

IS MANAGERS CAN DOW DO form easy off-hours PC maintenance, which lowers support costs, using a new breed of adapter card from Intel Corp. The new EtherExpress card lets managers remotely turn on. boot up and service PCs from a central location. Those are capa bilities rendors have been mushing with network computers as a way to cut the total cost of PC

The card uses IBM's Wake on-LAN technology, which is also being used in network NEC America, Inc. and IBM

said they are committed to us. ing the new Ether Express adapter in their PCs. Intel said several other PC makers will follow suft but it wouldn't identify them. Chuck Rush said he doesn't believe the PC adapter will keep

his company from investing in

network computers. "I think the consideration for network computers is really test a matter of cost," said Rush global network architect at Mc-Donald's Corp. in Oakbrook Terrace, Ill. "We're looking at NCs, but we're not 100% sold on them

Intel also offers the LANDesk Service Agent, a preboot agent that enables new PCs to be booted from a remote management server for installation or upgrading of operating systems and

Wake-on-LAN enables a PC to be remotely turned on for automated management service including virus scans, software updates and ongoing main nance during off-bours. O

intel·based workstation in were costs for powergry users. Page 67

HFS's case, it is more like 15 different sets of data. And getting there isn't core. BUILDING FROM SCRAYCH

Integration of the type HFS is trying to achieve involves meld-ing different databases, data models, product codes and data collection methods and then building a warehouse from

The HFS warehouse will be red by Digital Equip Corn. commetrical multiprocesting Alpha servers russi ermix Corp. database engine. The data being fed into it comes from a mix of mainframe, Oracle Corp., Sybase. Inc., Informix and Microsof Corp. SQL Server databases. Digital'a 64-bit architecture. their scalability and their support for Very Large Memory p

vided what we were looking for Bryant, manager of database technology at HFS. The decision to go with Informit was made last year. Tilting the balance in its favor were its

partitioning capabilities and fea tures such as the 64-bit and large file support on the Infor-mix 7.23 database, Bryant said. The data comes from the tens of millions of customer transactions involving HFS brands

every year. For example, HFS collects information from about 45 million room reservations, 15 million Avis rentals, 1.5 milli real estate sites and about a mil-

GAO blasts DOD's year 2000 method By Sharon Machlis needs improvement and said it has instituted a validation and

THE U.S. DEFENSE Department's method of tracking potential year 2000 prob throughout the military "is not a reliable and accurate tool for managing [its] year 2000 eforts," according to a report re-

leaned by the General Accounting Office (GAO). Without an immediate effort to fix the problem, the GAO concluded, "the department's year 2000 efforts will be at risk

In its formal response to the report, the Defense Department agreed its inventory system

ion time-share reservations. To build the warehouse, HFS had to extract, clean, convert and move relevant data from each of those sources to the centralized

FAST GROWTH The completed warehouse will start at a relatively modest 500G bytes but is expected to nearly triple to 1.2T bytes by early next

"It sook almost a year of constant interaction with our brands just to decide what information we wanted to collect. how we were going to collect it and from where," Anderson

After testing many of the data acquisition and cleansing tools available in the market - and rejecting them for being too expensive or inflexible - the inte-

data-quality program for the

At issue is the Defense Inte-

gration Support Tools (DIST)

system, which is used to inven-

tory all computer systems throughout the U.S. military

Users told GAO investigators

that DIST "is an antiquated and

labor-intensive system" that

contains duplicate, inaccurate

and incomplete entries. As a re-

sult, some frustrated informa

poped using it altogether.

tion systems personnel have

The GAO contends that a

The basic driver for anythi like this is the competition. If you look at the real estate busi ness, for instance, our brands have about 35% of the market-

gration team finally decided to

develop its own technology for

cting data from mu

sources and feeding the data to a

central warehouse (see related

The result was HFS's pro

mat," which at a basic level de

fines what kind of information should get into the central ware-house. It also provides a stan

dard set of specifications for ex

actly how the data gets mapped

tary "universal message

place. That means there's 75% of sites out there that don't have our flag. That's the opportunity we want to tap" with these technologies, Anderson said. [] essential for accurate assessment of the year 2000 problem.

Also, lack of a cross agency datahour will hinder decisionmaking about costs and expected time frames, according to the GAO Although some of the armed services can turn to their own

databases and tracking techniques, the Navy had been counting on DIST for its year 2000 assessment phase. The Defense Infor

Systems Agency has acknowledged DIST isn't working as well as it needs to. The agency said it has been working since last fall to boost the accuracy and usefulness of the tool. New releases of DIST are acheduled for next month and October D

complete systems inventory is ARP 🔷 🔾







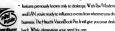
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and LAN, you're ready to influence events from wherever you do business. The Hitachi Vision Book Pro. It will give you your desk Y back While eliminating your need for one.



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COMMENTARY

Memo to Jobs: Take foot off neck of cloners. David Coursey

swore I wouldn't write another Apple column. But that picture of Steve Jobs on the cover of Time last for management turns out to be him. For me, that killed jobs' credibles, to I shouldn't be surprised that he's now week - telling Bill Gates that Microsoft's investment in Apple makes the world a better place - was more than I could bear.

Although I agree with Jobs that a world with Apple is better than one without, the idea of Jobs — who apparently sold his own Apple shares about the same time he was axing Gil Amelio - thanking Gates for buying in is, well, "retch, burf? as one co-worker described it.

Tobs' plan to save Apple appears deeply rooted in dragging the company back to the time of his ouster - more than a decade ago - and starting over from that point. It may he an interesting exercise to ponder such things, but Jobs seems intent on forcing us to relie them. Perhaps then we'll appreciate what a smart guy be is and forget the debacle of the Next hardware platform. Not likely.

In his quest to recapture those thrilling days of yesteryear, Jobs has hired back the creative but ineffectual advertising

agency he once worked with. More troublesome, lobs now seems to he trying to force the cloners - Round Rock, Texas-based Power Computing especial-

ly - out of the Macin-As Power Computing takes market share

from Apple (it's funny how better, less expensive boses will do that, isn't it?), Jobe seems to he telling customers that the industry isn't big emough for both companies and that he's

got the clout to solve the problem. This from the guy who apparently sold all but one of his Apple shares in June because he didn't have faith that Apple

working to kill Apple's credibility.

What about the people who boug Power Computing's Mac OS machin ed on what seemed like Apple's com ment to broaden support for the plat-form by licensing it?

What about the notion that a competitive mar ket is an efficient market? And that cussees are well-served by the price competi-tion that results from second-sourcing? don't remember the

would pull the rug out if cloners did too well (or if Apple did too poorly).

That's especially sad because Power Computing has built low- and high-end force Apple to do better. It's no accident that Apple's product line today is arguably the best it's ever been. And the fastest I've ever seen Word or Excel run - on

any platform — is on the new 275-MHz Macintosh from Power Computing. That competition is the only thing that keeps Mac OS machines even raguely price competitive with Intel bostes, and Power

Computing gets most of the codd:

Computing gets most of the codd:

If that's what jobs is trying to put an
end to—and people such as Power Computing President jod facher say be is—
then Apple will never return to beath.
Good thing, then, that Kocher's company is building a new line of Intel based

machines as quickly as possible. Then, like every other Macianosh wesdor — hardware and software both — Power Computing will slide out of the Macian tosh market for the greener Wintel pas

What would really make the world a better place would be for jobs to pick up the telephone and call Fower Computing and order a few machines. And then romise the company and other cloners is licensing terms. A healthy market requires more than one participant. II

Coursey, an analyst and consultant, is editor of "coursey.com," an online neurlett available at www.coursey.com. His E-mail rest is devid@coursey.com.

Steve's Job: A Toy Story David Moschella

et's see. Microsoft gets relief from a long-swom in, jobs seized the tritistrive action standing user interface patent dispute, addi-standing user interface patent dispute, addi-standing user interface patent dispute, additional armor to fend off any government anti- can give all the advice he wants, but trust suit, a key ally in its all-out battle with Netscape and lava and a wave of favorable publicity for so benevolently "helping out" its one-time rival.

Apple gets Microsoft to agree to keep oping the software it has built into a ess worth several hundred million dollars. Microsoft also agrees not to sell its new Apple shares for all of three years. So for that brief period, a small part of Microsoft actually hopes Apple prospers. Wow, what a great deal Steve Jobs just

negotiated.

Of course, what Apple really got for all
of its growling was a giant red berring, a piece of glitzy news to take people's minds off the fact that it still doesn't have a CEO, that its licensing strategy is in dis-array and that the overall Maciatosh plat-form is still spiraling downward. Also, the deal was the perfect backdrop for the latest episode of the Steve Jobs' will-

longest running tea since Mario Cuomo. Can anyone recall a case in which a company's decision-making has been so completely hijacked by som who is essentially servconsultant, cheerless and executive recruit

This is business as a toy

stoce, a chance to play out all of your stra-tegic fantssies without assuming any real responsibility. At least President Clinton didn't let Dick Morris he seen with his

But with the old Apple board on the way out and the new one just being

Can anyone recall a case tude abouted in which a company's

decision-making has been so completely hijacked by

ssentially a consultant?

By deferring to Microsoft's browser and Java strategies. Apple has compro-mised the independent software ele-gance that formed the very soul of its

board should be to tell Steve that with Oracle much more difficult (I wonass and until be is made CEO, be

Steve a latest adv ture.) Not surpris dy, many in the

nity are deeply di I'm not sure which is worse the way it was done.

Apple has a long istory of seeing it self as different. In this case, the di ence is its total defiance of standard business operating procedures. In the real orld, authority and responsibility come ogether. But apparently, Steve a job is all uthority with the responsibility left to

ees — unless, of course, he actual omes Apple's next CEO.D

4 4 4 A

Usenet ferams

The following are recent Usenet newsgroup discussion threads found on the Internet. You may be able to pick up the thread by entering keywords at the search engine ways desamines com-

- Using intranets for knowledge management (comp. infosystems.intranet)
- Will Informix survive? (comp.dat/bases.informix)
- OpenVMS Frequently Asked Questions (comp.sys.dec)
- Is it possible to deliver error-free software? (compsoftware-eng)

 Can a client/server application be converted to a Web application automatically? (comp. client-server)

- Skimming through electronic texts (comp.human-factors)
- Building an intranet with AS/400 (comp.sys.ibm. as400.misc)

DOTTING I'S, CROSSING T'S

Sure, the job applicant has a great resume. But have you checked the personellity tests revealed by Me handwritten of A feeding prochesignt the sembedded her expertise in PC software called Baile Low's Hedwritten of A Analyzav. While prochess personality profile of job applicants, family members or even crimines suspects. The \$300 Windows parkage can be developed from the Internet at your writinggoodly, can.



Spreadsheet Hall of Shame

A visit to the Spreadsheet Research Web site (www. cba.hawaii.edu/panko/ssr/) is a chilling experience. The collection of studies shows that spreadsheet users make errors at rates that are "deeply disturbing," says Professor Raymond R. Panko.





Inside Lines

Stop. Please stop!

We could deal with "Matesset" and "Motivaset." The most penchant is juin "cyber" on the front and of lowest such as "space" and "see" was anneying, but OK. Last week, though, the limitly went too for when an illicois market research from the Us at a causing heat trademarked the term "Mocasiles," Their's fee "Soussed Breakcasting." which is a vage motien that push and pull Information models can combine to make the world a botter place. We say list's call a merealrism on fault and fe'ry weers distillate orderings.

Write joke once, tell anywhere

Rephrasing the Java mantes — "write once, run anywhere" — has become good sport the past few meeths. Allowself's talke "littlement to come, but everywhere." But, speaking at the "Underes NT tobraset Scholonis show in San Francisco lest week, Mitchell Kentzman, chair man and CEO of Sphase, offered this observation on Microsoft's view: "Write once, run anywhere — but why would you want to run arrivers but Writedows?"

Not a good sign

Executives at the new Bell Allantic, the result of a marger of Bell Allantic and Hyrox, held a taleconference Friday meeting in New York, while press calling in from around the notion. Well, what do you smoot? Talephone operators had to repeatedly speciagles for pooposity connections, which made it difficult for reporters outside New York to have or adequations.

Worf, Mars, Bullwinkle and more

A survey of systems manages who run monitoring software from Concord Communications revealed that many memolitheir servers offer science fiction characters, calential objects and carboon characters. But several severs shad onlique functional names, such as touch less image server that weedle up at right, between (it was every of epplications) and skimmer (its tax calculations skim off memory for the government).

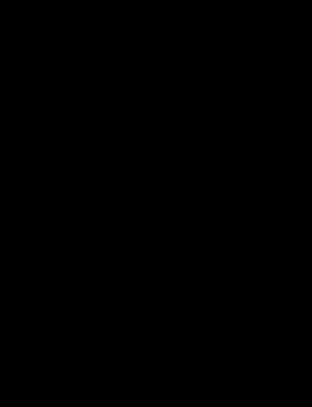
No honor among backers

A hacker also collining products used to read entelline television rignals, wow hackerscateling com/infeptuhim, worns buyers about gotting ripped off. For example, battery carel lists that self for Sapo an unlikely to be legislature when the street price for such americard amulators that work is 3650 or more. Warns the anonymous hacker to his would but colleagues in crime: "There were lot of Phisneys."

or Trok 101

Jack II I VIS. Bit I be a province process in the tweel's Share technical confinence in Atlanta, 1884 / Lobos constituted plant Leady Blanca Educación in Atlanta, 1884 / Lobos companion planta planta Leady Blanca Shar Part an companed the effects of Bitle, Sons and robe vanions to the Federa Companion the effects of Bitle, Sons and robe vanions to the Federa Companion of the Particle Companion on vendo for the Particle Companion on vendo for the Particle Companion on vendo for the Particle Companion of the

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software eng)

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client-server)

Skimming through electronic texts (comp.human-factors)

■ Building an intranet with AS/400 (comp.sys.ibm. as400 misc)



DOTTING I'S, CROSSING T'S

ure, the job applicant has a great resume. But have
no checked the personality traits revealed by his
anduriting? A handing graphologist has embedded her
partite in PC activers called Shalls Lew's Handwrit-

ing Analyzor, which produces a personality profile of job

The \$395 Windows package can be downloaded fro

ents, family members or even criminal suspects.

Spreadsheet Hall of Shame

A visit to the Spreadsheet Research Web site (www.cha.hawati.edu/panko/ssr/) is a chilling experience. The collection of studies shows that spreadsheet users make errors at rates that are 'ideeply disturbing," says Professor Raymond R. Panko.



Honey, I shrunk the lab

in West Lafeyette, ind., have developed a wey to shrink the machines used in chemistry laboratories and place them on a single silicon che. "We now heve the sellity to de chemistry en a chip and carry out large numbers of experiments at the same time," says researcher Fred Require (right). The chips may be evallable in three to five years.

thers at Purdue University

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